

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DEE 7,6 H10
 Edition : 06.11.87
 Superseded : 4.3.87
 Calibrating oil : ISO-4113

Combination no. : 9 400 230 069

Injection pump
 Pump designation : PES6A100D41ORS2676-1
 EP type number : 9 410 230 024
 Governor
 Governor design. : RSV450...1000A1C2186
 -1L
 Governor no. : 9 420 234 149

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6466A

1st version kW : 140.0
 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 27...29

Prestroke mm : 2.45...2.55
 : (2.40...2.60)

Contr.-rod trav.mm: 10.50...10.50
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

 Contr.-rod trav.mm: 11.60...11.60

 Del.quantity cm³/ : 12.1...12.3

 100H.: (11.9...12.5)

 Dispersion cm³/ : 0.3

 100H.: (0.6)

2nd speed 1/min: 450.0
 Contr.-rod trav. m: 5.8...6.0
 Del.quantity cm³/ : 1.8...2.2
 100H.: (1.5...2.4)
 Dispersion cm³/ : 0.3
 100H.: (0.5)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1000
 Del.quantity cm³/ : 121.5...123.5
 1000H.: (119.5...125.0)
 Dispersion cm³/ : 3.50
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 47...55

Testing:
 1st c-rod trav.mm : 10.60
 Speed 1/min : 1045...1055
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1070...1100
 4th speed 1/min : 1150
 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 23...31

Setting point w/out aux. spring

Speed 1/min : 450

Contr.-rod trav.mm: 5.4

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.00

Speed 1/min : 450

C-rod trav.mm : 5.80...6.00

C-rod trav.mm : 2.00

Speed 1/min : 550...610

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1000

C-rod trav.mm : 11.60...11.60

2nd speed 1/min : 700

C-rod trav.mm : 12.50...12.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 700

Del.quantity cm³/ : 132.0...135.0

1000H.: (129.5...137.5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.60

Speed 1/min : 1045...1055

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm³/ : 190.0...210.0

1000H.: (185.0...215.0)

Contr.-rod trav.mm: 19.00...21.00

HIGH IDLE

1st version

Speed 1/min : 1075

Contr.-rod trav.mm: 5.90...6.10

LOW IDLE

Speed 1/min : 450

Contr.-rod trav.mm: 5.80...6.00

Del.quantity cm³/ : 18.0...22.0

1000H.: (15.5...24.5)

Dispersion cm³/ : 3.50

1000H.: (5.50)

Remarks:

:

Adjustment without torque-control

spring retainer with 1 mm less

Start-of-delivery mark at 14° angular

displacement of the cam after start of

delivery of cylinder 1 with control-rod

travel = 10.50 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 8,3 D 1
Edition : 06.11.87
Superceeded : 7.86
Calibrating oil : ISO-4113

Combination no. : 9 400 230 080

Injection pump
Pump designation : PES6A95D42OLS2551
EP type number : 9 410 230 001
Governor
Governor design. : RSV375...1100AOC2166
-1R
Governor no. : 9 420 234 175

Customer-spec. information
Customer : J.I.CASE

Engine : A-504BD

1st version kW : 92.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 9 681 273 009

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 9 681 271 020

Outside diameter
x Wall thickness
x Length mm : 6.35X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _____

START OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.20...2.30
: (2.15...2.35)

Contr.-rod trav.mm: 10.50...10.50
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 10.50...10.50

Del.quantity cm³/ : 7.6...7.8

100H.: (7.4...8.0)

Dispersion cm³/ : 0.3

100H.: (0.6)

2nd speed 1/min: 375.0

Contr.-rod trav. m: 7.7...7.9

Del.quantity cm³/ : 1.6...2.0

100H.: (1.3...2.2)

Dispersion cm³/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm³/ : 76.0...78.0

1000H.: (74.0...80.0)

Dispersion cm³/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 42...50

Testing:

1st c-rod trav.mm : 9.50

Speed 1/min : 1160...1170

2nd c-rod trav.mm : 4.00

Speed 1/min : 1230...1250

4th speed 1/min : 1350

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 26...34
Setting point w/out aux. spring
Speed 1/min : 375
Contr.-rod trav.mm: 7.8

Testing:

Speed 1/min : 100
Speed 1/min : 375
C-rod trav.mm : 7.70...7.90
C-rod trav.mm : 2.00
Speed 1/min : 670...730

SET IDLE AUXILIARY SPRING

Speed 1/min : 1280
Contr.-rod trav.mm: 2.00

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1100
C-rod trav.mm : 10.50...10.50
2nd speed 1/min : 700
C-rod trav.mm : 11.80...12.00
3rd speed 1/min : 600
C-rod trav.mm : 12.15...12.25

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 700
Del.quantity cm³/ : 86.5...89.5
1000H.: (84.0...92.0)
Dispersion cm³/ : 5.00
1000H.: (7.00)
Speed 1/min : 600
Del.quantity cm³/ : 94.0...94.0
1000H.: (96.0...96.0)
Dispersion cm³/ : 5.00
1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than
full-load trav.mm: 9.50
Speed 1/min : 1160...1170

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 13.5...14.5
1000H.: (13.2...14.8)
Contr.-rod trav.mm: 17.80...17.80

LOW IDLE

A04

Speed 1/min : 375
Contr.-rod trav.mm: 7.70...7.90
Del.quantity cm³/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm³/ : 3.50
1000H.: (5.50)

Remarks:

: CASE - A-166 258

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 8,3 A 6
Edition : 06.11.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 9 400 230 109
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 030
Governor
Governor design. : RSV400...1100A2C2190
-21R
Governor no. : 9 420 234 164

Customer-spec. information
Customer : C.D.C.

Engine : 6CT830

1st version kW : 117.1
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,6

Test inj. tubing : 9 681 271 029

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _____

START OF DELIVERY

Test pressure, bar: 27...29

A05

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Contr.-rod trav.mm: 10.50...10.50
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 10.60...10.70

Del.quantity cm³/ : 9.3...9.5

100H.: (9.1...9.5)

Dispersion cm³/ : 0.3

100H.: (0.6)

2nd speed 1/min: 400.0

Contr.-rod trav. m: 5.8...6.0

Del.quantity cm³/ : 1.6...2.0

100H.: (1.3...2.2)

Dispersion cm³/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm³/ : 93.5...95.5

1000H.: (91.5...95.5)

Dispersion cm³/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 45...54

Testing:

1st c-rod trav.mm : 9.60

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1195...1225

4th speed 1/min : 1300
C-rod trav.mm : 0.30...1.40

: C.D.C. - 391 1541

LOWEST RATED SPEED I

Control-lever
position degrees: 25...33
Setting point w/out aux. spring
Speed 1/min : 400
Contr.-rod trav.mm: 5.4

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 400
C-rod trav.mm : 5.80...6.00
C-rod trav.mm : 2.00
Speed 1/min : 440...500

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1100
C-rod trav.mm : 10.60...10.70
2nd speed 1/min : 750
C-rod trav.mm : 11.10...11.30

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 750
Del.quantity cm³/ : 99.0...103.0
1000H.: (97.0...105.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.60
Speed 1/min : 1140...1150

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 14.0...15.0
1000H.: (13.5...15.5)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 400
Contr.-rod trav.mm: 5.80...6.00
Del.quantity cm³/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm³/ : 3.50
1000H.: (5.50)

Remarks:

A06

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 8,3 A 7
Edition : 06.11.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 9 400 230 110

Injection pump
Pump designation : PES6A100D320/3RS2691
-4
EP type number : 9 410 230 030
Governor
Governor design. : RSV400...1100AOC2190
-22R
Governor no. : 9 420 234 173

Customer-spec. information
Customer : C.D.C.

Engine : 6CT830

1st version kW : 150.6
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,6

Test inj. tubing : 9 681 271 029

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _____

START OF DELIVERY

A07

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Contr.-rod trav.mm: 10.50...10.50
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 12.40...12.50

Del.quantity cm³/ : 12.1...12.3

100H.: (11.9...12.5)

Dispersion cm³/ : 0.3

100H.: (0.6)

2nd speed 1/min: 400.0
Contr.-rod trav. m: 5.8...6.0
Del.quantity cm³/ : 1.6...2.0
100H.: (1.3...2.2)
Dispersion cm³/ : 0.3
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1100
Del.quantity cm³/ : 121.5...123.5
1000H.: (119.5...125.5)
Dispersion cm³/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 42...50

Testing:
1st c-rod trav.mm : 11.40
Speed 1/min : 1140...1150
2nd c-rod trav.mm : 4.00

Speed 1/min : 1195...1225
4th speed 1/min : 1300
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 22...30
Setting point w/out aux. spring
Speed 1/min : 400
Contr.-rod trav.mm: 5.4

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 400
C-rod trav.mm : 5.30...5.50
C-rod trav.mm : 2.00
Speed 1/min : 460...520

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1100
C-rod trav.mm : 12.40...12.50
2nd speed 1/min : 750
C-rod trav.mm : 13.50...13.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 750
Del.quantity cm³/ : 136.0...140.0
1000H.: (134.0...142.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.40
Speed 1/min : 1140...1150

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 140.0...150.0
1000H.: (135.0...155.0)
Contr.-rod trav.mm: 21.00...21.00

LOW IDLE

Speed 1/min : 400
Contr.-rod trav.mm: 5.80...6.00
Del.quantity cm³/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm³/ : 3.50
1000H.: (5.50)

Remarks:

: C.D.C. - 391 1542

Adjustment without torque-control
spring retainer with 1 mm less
Limit shutoff stop screw to 1.0 mm,
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 8,3 A 8
Edition : 06.11.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 9 400 230 111
Injection pump
Pump designation : PES6A1000320/3RS2691
-4
EP type number : 9 410 230 030
Governor
Governor design. : RSV400...1100AOC2190
-23R
Governor no. : 9 420 234 174

Customer-spec. information
Customer : C.D.C.

Engine : 6CT830

1st version kW : 134,2
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 047
Inlet press., bar : 1.50
Calibrating nozzle-holder
assembly : 1 688 901 017
Opening
pressure, bar : 207...210
Perforated-plate
diameter mm : 0,6
Test inj. tubing : 9 681 271 029
Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600
(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values _____

START OF DELIVERY

A09

Test pressure, bar: 27...29
Prestroke mm : 2.80...2.90
: (2.75...2.95)
Contr.-rod trav.mm: 10.50...10.50
Cam sequence : 1- 5- 3- 6- 2- 4
SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + -⁰ : 0.50 (0.75)
SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm³/ : 11.3...11.5

100H.: (11.1...11.7)

Dispersion cm³/ : 0.3

100H.: (0.6)

2nd speed 1/min: 400,0
Contr.-rod trav. m: 5.8...6.0
Del.quantity cm³/ : 1.6...2.0
100H.: (1.3...2.2)
Dispersion cm³/ : 0.3
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1100
Del.quantity cm³/ : 113.5...115.5
1000H.: (111.5...117.5)
Dispersion cm³/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 47...55

Testing:
1st c-rod trav.mm : 10.90
Speed 1/min : 1140...1150
2nd c-rod trav.mm : 4.00

Speed 1/min : 1215...1245
4th speed 1/min : 1300
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 27...35
Setting point w/out aux. spring
Speed 1/min : 400
Contr.-rod trav.mm: 5.4

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 400
C-rod trav.mm : 5.80...6.00
C-rod trav.mm : 2.00
Speed 1/min : 485...545

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1100
C-rod trav.mm : 11.90...12.00
2nd speed 1/min : 750
C-rod trav.mm : 12.60...12.80

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 750
Del.quantity cm³/ : 120.0...124.0
1000H.: (118.0...126.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.90
Speed 1/min : 1140...1150

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 140.0...150.0
1000H.: (135.0...155.0)
Contr.-rod trav.mm: 21.00...21.00

LOW IDLE

Speed 1/min : 400
Contr.-rod trav.mm: 5.80...6.00
Del.quantity cm³/ : 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm³/ : 3.50
1000H.: (5.50)

Remarks:

: C.D.C. - 391 1545

Adjustment without torque-control
spring retainer with 1 mm less
Limit shutoff stop screw to 1.0 mm.
ull-load delivery with torque-control
pring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 G 27
 Edition : 11.12.87
 Replaces : 9.10.87
 Test oil : ISO-4113

Combination no. : 0 400 463 153

Injection pump
 Pump designation : PES3A80D410/3RS1350
 EP type number : 0 410 483 023
 Governor
 Governor design. : RSV325...1250A2C2168
 -3L
 Governor no. : 0 420 232 475

Customer-spec. information
 Customer : KHD

Engine : F3L912

1st version kW : 40.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

A11

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 2

Phasing : 0-120-240

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.10...10.20

Del. quantity cm³/ : 5.7...5.8

100 s: (5.6...6.0)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 325.0

Rack travel in mm : 6.8...7.0

Del. quantity cm³/ : 1.0...1.6

100 s: (0.8...1.7)

Spread cm³ : 0.2

100 s: (0.3)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 57.5...58.5

1000 : (56.0...60.0)

Spread cm³ : 2.50

1000 : (3.50)

RATED SPEED

1st version

Control lever

position degrees: 45...53

Testing:

1st rack travel in: 9.10

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1315...1345
3rd rack travel in: 4.00
Speed rpm : 1330...1360
4th rack travel in: 1500
Speed rpm : 0.30...1.40

APPLICATION
Tractor (tractor engines)

LOW IDLE 1

Control lever
position degrees: 13...21
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.00
Speed rpm : 455...515

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.10...10.20
2nd speed rpm : 500
Rack travel in m: 10.90...11.00
4th speed rpm : 1025
Rack travel in m: 10.50...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del. quantity cm³/ : 54.0...56.0
1000 s: (52.0...58.0)
Spread cm³ : 2.00
1000 s: (-)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.10
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 130.0...140.0
1000 s: (127.0...143.0)
Rack travel in mm : 19.50...21.00

Remarks:

: DX3.30 V/F

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 G 29
Edition : 11.12.87
Replaces : 18.9.87
Test oil : ISO-4113

Combination no. : 0 400 463 154

Injection pump
Pump designation : PES3A80D410/3RS1350
EP type number : 0 410 483 023
Governor
Governor design. : RSV325...1175A8C2223
-L
Governor no. : 0 420 232 482

Customer-spec. information
Customer : KHD

Engine : F3L912

1st version kW : 33.0
Rated speed : 2350

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.90...2.00
: (1.85...2.05)

Rack travel in mm : 9.00...12.00
Firing order : 1- 3- 2

Phasing : 0-120-240

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 10.20...10.50

Del. quantity cm³/ : 4.8...4.9

100 s : (4.6...5.0)

Spread cm³ : 0.2

100 s : (0.4)

2nd speed rpm : 325.0

Rack travel in mm : 6.2...6.4

Del. quantity cm³/ : 1.0...1.6

100 s : (0.8...1.7)

Spread cm³ : 0.2

100 s : (0.3)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Del. quantity : 48.0...49.0

1000 : (46.5...50.5)

Spread cm³ : 2.50

1000 : (4.00)

RATED SPEED

1st version

Control lever

position degrees: 52...60

Testing:

1st rack travel in: 8.10

Speed rpm : 1215...1225

2nd rack travel in: 4.00

Speed rpm : 1240...1270
3rd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1420
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.8

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 6.20...6.40
Rack travel in mm : 2.00
Speed rpm : 465...525

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 800
Rack travel in m: 8.80...8.90
2nd speed rpm : 500
Rack travel in m: 10.60...10.70
3rd speed rpm : 800
Rack travel in m: 10.20...10.50
4th speed rpm : 1175
Rack travel in m: 9.10...9.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1175
Del.quantity cm³/ : 46.0...50.0
1000 s: (44.0...52.0)
Speed rpm : 800
Del.quantity cm³/ : 45.0...47.0
1000 s: (43.0...49.0)
Spread cm³ : 2.50
1000 s: (4.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.10
Speed rpm : 1215...1225

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...110.0
1000 s: (97.0...113.0)

Rack travel in mm : 17.00...17.30

Remarks:

: RENAULT

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 G 32
 Edition : 11.12.87
 Replaces : 2.11.87
 Test oil : ISO-4113

Combination no. : 0 400 463 155

Injection pump
 Pump designation : PES3A80D410/3RS1350
 EP type number : 0 410 483 023
 Governor
 Governor design. : RSV325...1175A8C2223
 -1L
 Governor no. : 0 420 232 483

Customer-spec. information
 Customer : KHD

Engine : F3L912

1st version kW : 38.0
 Rated speed : 2350

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 2

Phasing : 0-120-240

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 10.90...11.00

Del. quantity cm³/ : 5.5...5.6

100 s : (5.4...5.8)

Spread cm³ : 0.2

100 s : (0.3)

2nd speed rpm : 325.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 0.8...1.4

100 s : (0.6...1.5)

Spread cm³ : 0.2

100 s : (0.3)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Del. quantity : 55.5...56.5

1000 : (54.0...58.0)

Spread cm³ : 2.50

1000 : (3.50)

RATED SPEED

1st version

Control lever

position degrees: 52...60

Testing:

1st rack travel in: 9.10

Speed rpm : 1215...1225

2nd rack travel in: 4.00

Speed rpm : 1245...1275
3rd rack travel in: 4.00
Speed rpm : 1250...1280
4th rack travel in: 1425
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 455...515

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1175
Rack travel in m: 10.10...10.20
2nd speed rpm : 500
Rack travel in m: 10.90...11.00
3rd speed rpm : 1050
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1175
Del. quantity cm³/ : 56.0...60.0
1000 s: (54.0...62.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.10
Speed rpm : 1215...1225

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 100.0...110.0
1000 s: (97.0...113.0)
Rack travel in mm : 17.00...17.30

Remarks:

: RENAULT

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 G 33
 Edition : 11.12.87
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 463 156

Injection pump
 Pump designation : PES3A80D410/3RS1350
 EP type number : 0 410 483 023
 Governor
 Governor design. : RSV325...1075A8C2163
 -5L
 Governor no. : 0 420 232 493

Customer-spec. information
 Customer : KHD

Engine : F3L912

1st version kW : 34.0
 Rated speed : 2150

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 2

Phasing : 0-120-240

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 11.30...11.60

Del. quantity cm³/ : 5.3...5.4

100 s : (5.1...5.5)

Spread cm³ : 0.2

100 s : (0.4)

2nd speed rpm : 325.0

Rack travel in mm : 7.4...7.6

Del. quantity cm³/ : 1.0...1.6

100 s : (0.8...1.7)

Spread cm³ : 0.2

100 s : (0.3)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Del. quantity : 53.0...54.0

1000 : (51.5...55.5)

Spread cm³ : 2.50

1000 : (4.00)

RATED SPEED

1st version

Control lever

position degrees: 46...54

Testing:

1st rack travel in: 9.10

Speed rpm : 1115...1125

2nd rack travel in: 4.00

Speed rpm : 1140...1170
3rd rack travel in: 4.00
Speed rpm : 1155...1185
4th rack travel in: 1370
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 14...22
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.7

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 6.10...6.30
Rack travel in mm : 2.00
Speed rpm : 455...515

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 800
Rack travel in m: 9.70...9.80
2nd speed rpm : 500
Rack travel in m: 11.70...11.80
3rd speed rpm : 800
Rack travel in m: 11.30...11.60
4th speed rpm : 1075
Rack travel in m: 10.10...10.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1075
Del. quantity cm³/ : 48.5...52.5
1000 s: (46.5...54.5)
Speed rpm : 800
Del. quantity cm³/ : 36.0...38.0
1000 s: (34.0...40.0)
Spread cm³ : 2.50
1000 s: (-)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.10
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 95.0...105.0
1000 s: (92.0...108.0)

Rack travel in mm : 17.10...17.30

Remarks: : DX 3.10

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 1,8 U 1
Edition : 07.01.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 474 120

Injection pump
Pump designation : PES4A50D41ORS1010
EP type number : 0 410 454 023
Governor
Governor design. : RSV350...1650A2B217D
L
Governor no. : 0 420 234 111

Customer-spec. information
Customer : DAIMLER-BENZ

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.70...1.80
: (1.65...1.85)

Rack travel in mm : 9.00...12.00
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1650

Rack travel in mm : 12.60...12.70

Del. quantity cm³/ : 2.7...2.8

100 s: (2.6...2.9)

Spread cm³ : 0.2

100 s: (0.2)

2nd speed rpm : 350.0
Rack travel in mm : 8.4...8.6
Del. quantity cm³/ : 1.0...1.4
100 s: (0.9...1.4)
Spread cm³ : 0.1
100 s: (0.2)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...1.00

Governor spring pre-tension
Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1650
Del. quantity : 27.0...28.0
1000 : (26.0...29.0)
Spread cm³ : 2.00
1000 : (2.50)

RATED SPEED

1st version
Control lever
position degrees: 59...67

Testing:
1st rack travel in: 11.60
Speed rpm : 1690...1700
2nd rack travel in: 4.00
Speed rpm : 1745...1775
3rd rack travel in: 4.00
Speed rpm : 1775...1805
4th rack travel in: 1875
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 8.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 350
Rack travel in mm : 8.40...8.60
Rack travel in mm : 2.00
Speed rpm : 640...700

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1650
Rack travel in m: 12.60...12.70
2nd speed rpm : 500
Rack travel in m: 13.80...13.90
3rd speed rpm : 1200
Rack travel in m: 13.20...13.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 900
Del. quantity cm3/ : 29.0...30.0
1000 s: (28.0...31.0)
Speed rpm : 500
Del. quantity cm3/ : 28.0...30.0
1000 s: (27.0...31.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.60
Speed rpm : 1690...1700

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 16.30...16.70

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 19,0 H
 Edition : 18.12.87
 Replaces : 9.82
 Test oil : ISO-4113

Combination no. : 0 400 640 100

Injection pump
 Pump designation : PE12A95D61QLS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1047D
 L
 Governor no. : 0 420 214 242

Customer-spec. information
 Customer : KHD

Engine : F12L413FW

1st version kW : 230.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

 Rack travel in mm : 9.20...9.30

 Del. quantity cm³/ : 8.1...8.2

 100 s : (7.9...8.4)

 Spread cm³ : 0.3

 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del. quantity cm³/ : 0.9...1.5
 100 s : (0.6...1.7)
 Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.40...1.60
 2nd speed rpm : 750
 travel mm : 4.00...4.30
 3rd speed rpm : 1190
 travel mm : 8.40...8.60

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1150
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 81.0...82.0
 1000 : (79.0...84.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 8.10

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1225...1255

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 7...15

Testing:

Speed rpm : 100

Minimum rack travel: 7.50

Speed rpm : 300

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 540...600

CONSTANT REGULATION

Speed rpm : 325...400

TORQUE CONTROL

Dimension a mm : 0.40

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 9.10...9.20

2nd speed rpm : 950

Rack travel in m: 9.10...9.40

3rd speed rpm : 850

Rack travel in m: 9.40...9.60

4th speed rpm : 500

Rack travel in m: 9.50...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750

Del. quantity cm³/ : 84.5...87.5

1000 s: (82.0...90.0)

Speed rpm : 650

Del. quantity cm³/ : 93.5...96.5

1000 s: (91.0...99.0)

BREAKAWAY

1st version

A22

1mm rack travel less than

full load rack tr: 8.10

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 15.40...15.80

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 19,0 N2
Edition : 18.12.87
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 400 640 107

Injection pump
Pump designation : PE12A95D610LS2590
EP type number : 0 410 690 995
Governor
Governor design. : RQV300...1150AB1047D
L
Governor no. : 0 420 214 242

Customer-spec. information
Customer : KHD

Engine : F12L413FW

1st version kW : 204,0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.50...1.60
: (1.45...1.65)

Rack travel in mm : 9.00...12.00
Firing order : 1- 4- 9- 8- 5- 2-
11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
180-195-240-255-300-
315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.30...9.40

Del. quantity cm³/ : 6.9...7.1

100 s : (6.7...7.3)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0
Rack travel in mm : 7.2...7.4
Del. quantity cm³/ : 1.4...2.0
100 s : (1.1...2.2)
Spread cm³ : 0.7
100 s : (-)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.20...1.30
2nd speed rpm : 400
travel mm : 2.20...2.60
3rd speed rpm : 600
travel mm : 3.00...3.50
4th speed rpm : 1195
travel mm : 8.40...8.50
5th speed rpm : 1245
travel mm : 9.10...9.30

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1200
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150

Del. quantity : 69.0...71.0
1000 : (67.0...73.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:

1st rack travel in: 8.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack travel: 7.80
Speed rpm : 300
Rack travel in mm : 6.20...6.40

CONSTANT REGULATION

Speed rpm : 320...430

TORQUE CONTROL

Dimension a mm : 1.10
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.30...9.40
2nd speed rpm : 500
Rack travel in m: 10.40...10.50
3rd speed rpm : 935
Rack travel in m: 10.10...10.30
4th speed rpm : 1045
Rack travel in m: 9.60...9.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del. quantity cm³/ : 79.5...82.5
1000 s: (77.0...85.0)
Speed rpm : 650
Del. quantity cm³/ : 93.5...96.5
1000 s: (91.0...99.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

2. Set fuel delivery in fuel-delivery
characteristics with stop above the
governor housing.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 9,6 I 1
 Edition : 11.12.87
 Replaces : 4.86
 Test oil : ISO-4113

Combination no. : 0 400 646 271

Injection pump
 Pump designation : PE6A95D410LS2621
 EP type number : 0 410 696 982
 Governor
 Governor design. : RQV300...1250AB1195L
 Governor no. : 0 420 212 172

Customer-spec. information
 Customer : KHD

Engine : F6L413F

1st version kW : 141.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

A25

Firing order : 1- 6- 5- 4- 3- 2

Phasing : 0-75-120-195-240-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.40...10.50

Del. quantity cm³/ : 9.4...9.6

100 s: (9.2...9.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.5...6.7

Del. quantity cm³/ : 0.8...1.4

100 s: (0.5...1.6)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.30

2nd speed rpm : 500

travel mm : 2.60...2.90

3rd speed rpm : 1000

travel mm : 5.40...5.60

4th speed rpm : 1300

travel mm : 7.70...7.80

5th speed rpm : 1380

travel mm : 8.50...8.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1375

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 94.0...96.0

1000 : (92.0...98.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 47...55

Testing:

1st rack travel in: 9.40

Speed rpm : 1290...1300

2nd rack travel in: 4.50

Speed rpm : 1365...1395

4th rack travel in: 1500

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 14...22

Testing:

Speed rpm : 100

Minimum rack travel: 8.00

Speed rpm : 300

Rack travel in mm : 6.50...6.70

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 10.40...10.50

2nd speed rpm : 500

Rack travel in m: 10.90...11.00

3rd speed rpm : 850

Rack travel in m: 10.70...10.90

4th speed rpm : 950

Rack travel in m: 10.50...10.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

Del. quantity cm³/ : 93.5...96.5

1000 s: (91.0...99.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40

Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 14.40...14.80

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 9,6 I 2
Edition : 11.12.87
Replaces : 18.9.87
Test oil : ISO-4113

Combination no. : 0 400 646 275

Injection pump
Pump designation : PE6A95D41OLS2621
EP type number : 0 410 696 982
Governor
Governor design. : RQ300/1250AB1148-1L
Governor no. : 0 420 200 104

Customer-spec. information
Customer : KHD

Engine : F6L413F

1st version kW : 141.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 6- 5- 4- 3- 2

Phasing : 0-75-120-195-240-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.40...10.50

Del. quantity cm³/ : 9.2...9.4

100 s: (9.0...9.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 0.8...1.4

100 s: (0.5...1.6)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 16.80...18.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 92.0...94.0

1000 : (90.0...96.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 17.6

Testing:

1st rack travel in: 9.40

Speed rpm : 1295...1310

2nd rack travel in: 4.00

Speed rpm : 1325...1355

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 6.5

Testing:

Speed rpm : 100

Minimum rack trave: 7.90

Speed rpm : 300

Rack travel in mm : 6.40...6.60

Rack travel in mm : 2.00

Speed rpm : 340...380

TORQUE CONTROL

Dimension a mm : 0.17

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 10.40...10.50

2nd speed rpm : 600

Rack travel in m: 10.90...11.00

3rd speed rpm : 915

Rack travel in m: 10.70...10.90

4th speed rpm : 980

Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

Del. quantity cm³/ : 91.5...94.5

1000 s: (89.0...97.0)

RACK STOP ADJUSTMENT

Speed rpm : 650

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40

Speed rpm : 1295...1310

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 15.30...15.60

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 12,7 P
 Edition : 18.12.87
 Replaces : 12.9.86
 Test oil : ISO-4113

Combination no. : 0 400 648 128

Injection pump
 Pump designation : PE8A95D41QLS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQV300...1100AB1126L
 Governor no. : 0 420 212 140

Customer-spec. information

Customer : KHD

Engine : F8L413F

1st version kW : 168.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.00...10.10

Del. quantity cm³/ : 8.9...9.1
 100 s : (8.7...9.3)

Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 1.2...2.0
 100 s : (0.9...2.2)

Spread cm³ : 0.5
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 0.70...0.80

2nd speed rpm : 450
 travel mm : 1.90...2.20

3rd speed rpm : 950
 travel mm : 6.40...6.60

4th speed rpm : 1215
 travel mm : 8.90...9.10

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1175
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Del. quantity : 89.0...91.0
 1000 : (87.0...93.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 48...56

Testing:

1st rack travel in: 9.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 14...20

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 415...535

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.00...10.10
2nd speed rpm : 500
Rack travel in m: 10.50...10.60
3rd speed rpm : 760
Rack travel in m: 10.30...10.50
4th speed rpm : 890
Rack travel in m: 10.00...10.20

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 90.5...93.5
1000 s: (88.0...95.5)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.50...14.90

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 I 1
Edition : 18.12.87
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 400 676 141

Injection pump
Pump designation : PE6A900320RS2547
EP type number : 0 410 696 180
Governor
Governor design. : RSV250...1200ASB779R
Governor no. : 0 420 233 121

Customer-spec. information
Customer : DAF

Engine : DT615

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.20...2.30
 : (2.15...2.35)

Rack travel in mm : 7.50...10.50

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
& maximum rack tra: 21.00
Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 10.80...10.90

Del. quantity cm³/ : 7.1...7.2

100 s: (6.9...7.4)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 250.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 0.9...1.3

100 s: (0.7...1.5)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 700

Del. quantity : 71.0...72.0

1000 : (69.0...74.0)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 47...55

Testing:

1st rack travel in: 9.80

Speed rpm : 1240...1250

2nd rack travel in: 4.00

Speed rpm : 1275...1305
3rd rack travel in: 4.00
Speed rpm : 1285...1315
4th rack travel in: 1450
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 13...21
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 330...390

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 11.10...11.20
2nd speed rpm : 400
Rack travel in m: 11.30...11.40
3rd speed rpm : 300
Rack travel in m: 11.50...12.00

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 1000
Rack travel in mm : 700
Contr.-rod trav.mm: 10.80...10.90

Measurement

Speed 1/min : 1000
1st pressure hPa : -
Rack travel in m: 9.80...10.00
2nd pressure hPa : 250
Rack travel in m: 10.60...10.70
3rd pressure hPa : 210
Rack travel in m: 10.10...10.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm³/ : 51.5...53.5
1000 s: (49.5...55.5)

BREAKAWAY

804

1st version
1mm rack travel less than

full load rack tr: 9.80
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...150.0
1000 s: (137.0...153.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10
Del.quantity cm³/ : 9.0...13.0
1000 s: (7.0...15.0)
Spread cm³ : 2.50
1000 s: (4.50)

Remarks:

Cold-start testing of RSV governor
according to VDT-I-420/114.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,3 K 8
Edition : 18.12.87
Replaces : 5.11.86
Test oil : ISO-4113

Combination no. : 0 400 676 176

Injection pump
Pump designation : PE6A95D41ORS2525
EP type number : 0 410 696 987
Governor
Governor design. : RSV250...1200A5C2199
L
Governor no. : 0 420 232 443

Customer-spec. information
Customer : DAF

Engine : DHTD 825

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2,00...2,10
: (1,95...2,15)
Rack travel in mm : 7,50...10,50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
& maximum rack tra: 21.00
Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.60...12.70

Del. quantity cm³/ : 10.9...11.0

100 s: (10.7...11.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0
Rack travel in mm : 6.0...6.2
Del. quantity cm³/ : 0.7...1.1
100 s: (0.4...1.3)

Spread cm³ : 0.3
100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 4.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Aneroid pressure h: 700
Del. quantity : 109.0...110.0
1000 : (107.0...112.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:

1st rack travel in: 11.60
 Speed rpm : 1230...1240
 2nd rack travel in: 4.00
 Speed rpm : 1290...1320
 3rd rack travel in: 4.00
 Speed rpm : 1310...1340
 4th rack travel in: 1490
 Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
 position degrees: 17...25
 Setting point w/out bumper spring
 Speed rpm : 250
 Rack travel in mm : 5.6
 Speed rpm : 250
 Rack travel in mm : 6.00...6.20
 Rack travel in mm : 2.00
 Speed rpm : 445...505

TORQUE CONTROL

Torque control curve - 1st version
 1st speed rpm : 1000
 Rack travel in m: 13.40...13.50
 2nd speed rpm : 400
 Rack travel in m: 13.60...13.70
 3rd speed rpm : 300
 Rack travel in m: 13.80...14.30

Aneroid/Altitude
Compensator Test

1st version

Setting
 Speed rpm : 1000
 Rack travel in mm : 700
 Contr.-rod trav.mm: 12.60...12.70

Measurement

Speed 1/min : 1000
 1st pressure hPa : -
 Rack travel in m: 11.50...11.60
 2nd pressure hPa : 300
 Rack travel in m: 12.30...12.40
 3rd pressure hPa : 260
 Rack travel in m: 11.70...11.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
 Speed rpm : 600
 Del.quantity cm3/ : 85.5...86.5
 1000 s: (83.5...88.5)

BREAKAWAY

1st version
 1mm rack travel less than
 full load rack tr: 11.60
 Speed rpm : 1230...1240

STARTING FUEL DELIVERY

Speed rpm : 100
 Del.quantity cm3/ : 130.0...140.0
 1000 s: (127.0...143.0)
 Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
 Rack travel in mm : 6.00...6.20
 Del.quantity cm3/ : 7.0...11.0
 1000 s: (4.5...13.5)
 Spread cm3 : 3.50
 1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 I 6
Edition : 18.12.87
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 400 676 180

Injection pump
Pump designation : PE6A90D32ORS2547
EP type number : 0 410 696 180
Governor
Governor design. : RSV250...1200ASC2203
R
Governor no. : 0 420 233 203

Customer-spec. information
Customer : DAF

Engine : DT615

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.20...2.30
: (2.15...2.35)

Rack travel in mm : 7.50...10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
& maximum rack tra: 21.00
Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 10.80...10.90

Del. quantity cm³/ : 7.1...7.2

100 s: (6.9...7.4)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 250.0
Rack travel in mm : 5.9...6.1
Del. quantity cm³/ : 0.9...1.3
100 s: (0.7...1.5)
Spread cm³ : 0.2
100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 3.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Aneroid pressure h: 700
Del. quantity : 71.5...72.5
1000 : (69.5...74.5)
Spread cm³ : 3.00
1000 : (4.50)

RATED SPEED

1st version
Control lever
position degrees: 47...55

Testing:

1st rack travel in: 9.80
Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1270...1300
3rd rack travel in: 4.00
Speed rpm : 1305...1335
4th rack travel in: 1490
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 13...21
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.5
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 560...620

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 11.10...11.20
2nd speed rpm : 400
Rack travel in m: 11.30...11.40
3rd speed rpm : 300
Rack travel in m: 11.50...12.00

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 1000
Rack travel in mm : 700
Contr.-rod trav.mm: 10.80...10.90

Measurement

Speed 1/min : 1000

1st pressure hPa : -
Rack travel in m: 9.80...10.00
2nd pressure hPa : 250
Rack travel in m: 10.60...10.70
3rd pressure hPa : 210
Rack travel in m: 10.10...10.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm³/ : 51.5...53.5
1000 s: (49.0...56.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.80
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...150.0
1000 s: (137.0...153.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10
Del.quantity cm³/ : 9.0...13.0
1000 s: (7.0...15.0)
Spread cm³ : 2.50
1000 s: (4.50)

Remarks:

Cold-start testing of RSV governor
according to VDT-I-420/114.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : HAN 10,8 K
 Edition : 07.01.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 676 189
 Injection pump
 Pump designation : PE6A95D32ORS2557
 EP type number : 0 410 696 986
 Governor
 Governor design. : RSV350...750AOC2228-1R
 Governor no. : 0 420 233 215

Customer-spec. information
 Customer : HANOMAG

Engine : D963 A1/G

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.00
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 003
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27
 Prestroke mm : 2.15...2.25
 : (2.10...2.30)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

 Rack travel in mm : 11.70...11.80

 Del. quantity cm³/ : 10.9...11.1

 100 s : (10.7...11.3)

 Spread cm³ : 0.3

 100 s : (0.6)

2nd speed rpm : 350.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 1.2...1.8
 100 s : (0.9...2.0)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del. quantity : 109.0...111.0
 1000 : (107.0...113.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 27...35

Testing:
 1st rack travel in: 10.70
 Speed rpm : 740...750
 2nd rack travel in: 4.00
 Speed rpm : 780...810
 4th rack travel in: 940
 Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 17...25

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 6.5

Testing:

Speed rpm : 100

Minimum rack trave: 19.50

Speed rpm : 350

Rack travel in mm : 6.40...6.60

Rack travel in mm : 2.00

Speed rpm : 355...415

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 700

Rack travel in m: 11.70...11.80

2nd speed rpm : 500

Rack travel in m: 11.70...11.90

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70

Speed rpm : 740...750

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 118.0...128.0

1000 s: (115.0...131.0)

Rack travel in mm : 19.50...21.00

Remarks:

:

Cold-start testing of RSV governor
according to VDT-I-420/114.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 Q
 Edition : 11.12.87
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 836 035

Injection pump
 Pump designation : PES6ABS0410/3RS2749
 EP type number : 0 410 886 896
 Governor
 Governor design. : RQV325...1250AB1131-
 1L
 Governor no. : 0 420 212 211

Customer-spec. information
 Customer : KHD

Engine : F6L913

1st version kW : 84.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.30...10.40

Del. quantity cm³/ : 6.6...6.7

100 s : (6.4...6.9)

Spread cm³ : 0.3

100 s : (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 7.0...7.2

Del. quantity cm³/ : 1.0...1.6

100 s : (0.8...1.8)

Spread cm³ : 0.2

100 s : (0.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325

travel mm : 1.60...1.70

2nd speed rpm : 460

travel mm : 3.00...3.30

3rd speed rpm : 525

travel mm : 3.50...4.00

4th speed rpm : 1310

travel mm : 8.20...8.30

5th speed rpm : 1390

travel mm : 9.00...9.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1310

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 66.0...67.0

1000 : (64.0...69.0)

Spread cm³ : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 63...71

Testing:

1st rack travel in: 9.30

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1375...1405

4th rack travel in: 1500

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 13...21

Testing:

Speed rpm : 100

Minimum rack travel: 8.50

Speed rpm : 325

Rack travel in mm : 7.00...7.20

CONSTANT REGULATION

Speed rpm : 440...550

TORQUE CONTROL

Dimension a mm : 0.50

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 10.30...10.40

2nd speed rpm : 500

Rack travel in m: 10.80...10.90

3rd speed rpm : 1005

Rack travel in m: 10.60...10.80

4th speed rpm : 1135

Rack travel in m: 10.40...10.60

START CUT-OUT

Speed 1/min : 245 (265)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800

Del. quantity cm³/ : 55.0...57.0

1000 s: (52.5...59.5)

Speed rpm : 1000

Del. quantity cm³/ : 61.0...67.0

1000 s: (58.5...69.5)

Speed rpm : 1100

Del. quantity cm³/ : 62.0...68.0

1000 s: (59.5...70.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.30

Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 16.30...16.70

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 7,0 C 1
Edition : 11.12.87
Replaces : 28.8.87
Test oil : ISO-4113

Combination no. : 0 400 846 264

Injection pump
Pump designation : PES6A85D32ORS2337
EP type number : 0 410 886 921
Governor
Governor design. : RQ200/1250AB801DR
Governor no. : 0 420 203 089

Customer-spec. information
Customer : MAN

Engine : D0846HM42U

1st version kW : 118.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.50...1.60
: (1.45...1.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.70...10.80

Del. quantity cm³/ : 7.0...7.1

100 s : (6.8...7.3)

Spread cm³ : 0.3

100 s : (0.4)

2nd speed rpm : 200.0

Rack travel in mm : 8.4...8.6

Del. quantity cm³/ : 1.8...2.4

100 s : (1.6...2.6)

Spread cm³ : -

100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 550

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 70.0...71.0

1000 : (68.0...73.0)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 20.0

Testing:

1st rack travel in: 9.75

Speed rpm : 1295...1310

2nd rack travel in: 4.00

Speed rpm : 1335...1365

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 200

Rack travel in mm : 8.5

Testing:

Speed rpm : 100

Minimum rack trave: 9.90

Speed rpm : 200

Rack travel in mm : 8.40...8.60

Rack travel in mm : 2.00

Speed rpm : 340...380

TORQUE CONTROL

Dimension a mm : 0.30

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 10.70...10.80

2nd speed rpm : 500

Rack travel in m: 11.40...11.50

4th speed rpm : 1000

Rack travel in m: 11.10...11.30

5th speed rpm : 1125

Rack travel in m: 10.80...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500

Del. quantity cm³/ : 0.0...69.5

1000 s: (0.0...72.0)

Speed rpm : 800

Del. quantity cm³/ : 69.0...72.0

1000 s: (66.5...74.5)

RACK STOP ADJUSTMENT

Speed rpm : 200

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.75

Speed rpm : 1295...1310

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 123.0...133.0

1000 s: (120.0...136.0)

Rack travel in mm : 18.10...18.50

Remarks:

:

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,1P25
 Edition : 11.12.87
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 846 510

Injection pump
 Pump designation : PES6A95D410LS2542
 EP type number : 0 410 896 936
 Governor
 Governor design. : RQ250/1100AB1137-9L
 Governor no. : 0 420 200 091

Customer-spec. information
 Customer : MAN

Engine : D2566MUH

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.00...11.10

Del. quantity cm³/ : 10.0...10.3
 100 s: (9.8...10.5)

Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 250.0
 Rack travel in mm : 6.3...6.5
 Del. quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.0)

Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 100.0...103.0
 1000 : (98.0...105.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Setting point:
 Speed rpm : 600
 Rack travel in mm : 16.0

Testing:

1st rack travel in: 10.00
 Speed rpm : 1145...1160

2nd rack travel in: 4.00
 Speed rpm : 1225...1255

LOW IDLE 1

Setting point w/out bumper spring
 Speed rpm : 250

Rack travel in mm : 6.4

Testing:

Speed rpm : 100
Minimum rack travel: 7.90
Speed rpm : 250
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 370...410

TORQUE CONTROL

Dimension a mm : 0.65
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.00...11.10
2nd speed rpm : 600
Rack travel in m: 12.40...12.50
3rd speed rpm : 870
Rack travel in m: 12.00...12.20
4th speed rpm : 955
Rack travel in m: 11.20...11.50

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del. quantity cm³/ : 107.5...111.5
1000 s: (105.0...114.0)
Speed rpm : 700
Del. quantity cm³/ : 108.5...110.5
1000 s: (106.0...113.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 121.5...131.5
1000 s: (118.5...134.5)
Rack travel in mm : 13.00...13.60

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11.1P23
Edition : 11.12.87
Replaces : 9.3.87
Test oil : ISO-4113

Combination no. : 0 400 846 516

Injection pump
Pump designation : PES6A95D41OLS2542
EP type number : 0 410 896 936
Governor
Governor design. : RQV250...1100AB1177L
Governor no. : 0 420 212 162

Customer-spec. information
Customer : MAN

Engine : D2566 M/MF

1st version kW : 177.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 12.4...12.6

100 s : (12.2...12.8)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 6.7...6.9

Del. quantity cm³/ : 0.9...1.4

100 s : (0.6...1.6)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1115

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 124.5...126.5

1000 : (122.5...128.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 43...51

Testing:

1st rack travel in: 11.00

Speed rpm : 1140...1150

2nd rack travel in: 4.00

Speed rpm : 1180...1210

4th rack travel in: 1300

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 9...17

Testing:

Speed rpm : 100
Minimum rack trave: 8.20
Speed rpm : 250
Rack travel in mm : 6.70...6.90
Rack travel in mm : 2.00
Speed rpm : 335...395

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del.quantity cm3/ : 107.5...113.5
1000 s: (105.0...116.0)
Speed rpm : 750
Del.quantity cm3/ : 113.0...116.0
1000 s: (110.5...118.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 121.5...131.5
1000 s: (118.5...134.5)
Rack travel in mm : 14.70...15.30

Remarks:

: MAN-NR. 2-7440

Set idle stop at 425 min ⁻¹ to a
control-rod travel of 6.8 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,1P20
Edition : 11.12.87
Replaces : 9.3.87
Test oil : ISO-4113

Combination no. : 0 400 846 518

Injection pump
Pump designation : PES6A95D41OLS2542
EP type number : 0 410 896 936
Governor
Governor design. : RQV250...1100AB1177L
Governor no. : 0 420 212 162

Customer-spec. information
Customer : MAN

Engine : D2566 M/MF

1st version kW : 177.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 12.4...12.6

100 s : (12.2...12.8)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 6.7...6.9

Del. quantity cm³/ : 0.9...1.4

100 s : (0.6...1.6)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 150

travel mm : 0.40...0.70

2nd speed rpm : 550

travel mm : 3.60...4.00

3rd speed rpm : 900

travel mm : 5.60...6.10

4th speed rpm : 1200

travel mm : 9.50...10.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1115

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 124.5...126.5

1000 : (122.5...128.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 43...51

Testing:

1st rack travel in: 11.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 9...17

Testing:

Speed rpm : 100
Minimum rack travel: 8.20
Speed rpm : 250
Rack travel in mm : 6.70...6.90
Rack travel in mm : 2.00
Speed rpm : 335...395

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.00...12.10
2nd speed rpm : 500
Rack travel in m: 12.00...12.20

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del. quantity cm³/ : 107.5...113.5
1000 s: (105.0...116.0)
Speed rpm : 750
Del. quantity cm³/ : 113.0...116.0
1000 s: (110.5...118.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100

B20

Del. quantity cm³/ : 121.5...131.5
1000 s: (118.5...134.5)
Rack travel in mm : 14.70...15.30

Remarks:

: MAN-NR. 2-7441

Set idle stop at 425 min -1 to a
control-rod travel of 6.8 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,4 J
Edition : 11.12.87
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 846 528

Injection pump
Pump designation : PES6A9SD41QLS2639-1
EP type number : 0 410 896 920
Governor
Governor design. : RQV250...1100AB1177-2L
Governor no. : 0 420 212 174

Customer-spec. information
Customer : MAN

Engine : D2566MF

1st version kW : 162.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.50...1.60
: (1.45...1.55)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 14.30...14.40

Del. quantity cm³/ : 13.0...13.2

100 s : (12.8...13.4)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.6...7.8

Del. quantity cm³/ : 1.0...1.6

100 s : (0.7...1.8)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200
travel mm : 0.70...0.90

2nd speed rpm : 800
travel mm : 5.20...5.50

3rd speed rpm : 1200
travel mm : 7.90...8.10

4th speed rpm : 1400
travel mm : 9.70...10.20

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1

Speed rpm : 1260

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Del. quantity : 130.0...132.0

1000 : (128.0...134.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 44...52

Testing:

1st rack travel in: 11.80

Speed rpm : 1140...1150

2nd rack travel in: 4.00

Speed rpm : 1275...1305

4th rack travel in: 1400

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 12...20

Testing:

Speed rpm : 100

Minimum rack travel: 9.00

Speed rpm : 250

Rack travel in mm : 7.40...7.60

CONSTANT REGULATION

Speed rpm : 320...440

TORQUE CONTROL

Dimension a mm : 1.45

Torque control curve - 1st version

1st speed rpm : 1100

Rack travel in m: 12.80...12.90

2nd speed rpm : 500

Rack travel in m: 14.30...14.40

3rd speed rpm : 875

Rack travel in m: 13.90...14.10

4th speed rpm : 965

Rack travel in m: 13.10...13.40

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100

Del. quantity cm³/ : 122.0...126.0

1000 s: (119.5...128.5)

Speed rpm : 500

Del. quantity cm³/ : 130.0...133.0

1000 s: (127.5...135.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.80

Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 105.0...115.0

1000 s: (102.0...118.0)

Rack travel in mm : 15.20...15.40

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,4 B4
Edition : 22.01.88
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 400 846 532

Injection pump
Pump designation : PES6A95D41QLS2639-1
EP type number : 0 410 896 920
Governor
Governor design. : RQ250/1100AB1137-9L
Governor no. : 0 420 200 091

Customer-spec. information
Customer : MAN

Engine : D2566MF/220

1st version kW : 162.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.55)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 14.30...14.40

Del. quantity cm³/ : 13.0...13.2

100 s : (12.8...13.4)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.4...7.6

Del. quantity cm³/ : 1.0...1.6

100 s : (0.7...1.8)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 130.0...132.0

1000 : (128.0...134.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 11.80

Speed rpm : 1145...1160

2nd rack travel in: 4.00

Speed rpm : 1240...1270

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 7.5

Testing:

Speed rpm : 100

Minimum rack trave: 8.90

Speed rpm : 250

Rack travel in mm : 7.40...7.60

Rack travel in mm : 2.00

Speed rpm : 390...430

TORQUE CONTROL

Dimension a mm : 0.60

Torque control curve - 1st version

1st speed rpm : 1100

Rack travel in m: 12.80...12.90

2nd speed rpm : 600

Rack travel in m: 14.30...14.40

3rd speed rpm : 865

Rack travel in m: 13.80...14.00

4th speed rpm : 940

Rack travel in m: 13.10...13.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500

Del.quantity cm3/ : 130.0...133.0

1000 s: (127.5...135.5)

Speed rpm : 1100

Del.quantity cm3/ : 122.0...126.0

1000 s: (119.5...128.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.80

Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 105.0...115.0

1000 s: (102.0...118.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 P
Edition : 21.12.87
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 846 549

Injection pump
Pump designation : PES6A95D410RS2471
EP type number : 0 410 896 952
Governor
Governor design. : RQV300...1250AB1089-
2L
Governor no. : 0 420 212 190

Customer-spec. information
Customer : KHD

Engine : BF6L913C

1st version kW : 141.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
: (1.85...2.05)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0 60-120-180-240-300

Tolerance + - ° : 0,50 (0,75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.60...11.70

Del. quantity cm³/ : 10.1...10.3

100 s: (9.9...10.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300

Rack travel in mm : 7.5...7.7

Del. quantity cm³/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.30...1.40

2nd speed rpm : 650

travel mm : 3.70...3.90

3rd speed rpm : 1200

travel mm : 6.90...7.10

4th speed rpm : 1290

travel mm : 8.40...8.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1290

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Aneroid pressure h: 101.0

Del. quantity : ...103.0

1000 : (99.0...105.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 69...77

Testing:
1st rack travel in: 10.60
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1345...1375
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 14...22

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 300
Rack travel in mm : 7.50...7.70

CONSTANT REGULATION
Speed rpm : 350...485

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.60...11.70
2nd speed rpm : 500
Rack travel in m: 11.60...11.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 850
Del. quantity cm³/ : 94.5...97.5
1000 s: (92.0...100.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 3,1 B 1
 Edition : 11.12.87
 Replaces : 2.11.87
 Test oil : ISO-4113

Combination no. : 0 400 863 008

Injection pump
 Pump designation : PES3A900320/3RS2658
 EP type number : 0 410 893 004
 Governor
 Governor design. : RSV325...1500A2C505-
 2R
 Governor no. : 0 420 233 196

Customer-spec. information
 Customer : MWM

Engine : D226B-3

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
 : (2.90...3.10)

Rack travel in mm : 9.00...12.00

Firing order : 1- 2- 3

Phasing : 0-120-240

Tolerance + - ° : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...0.00
 & maximum rack tra: 21.00
 Difference ° CS : 3.50...4.50

BASIC SETTING

1st speed rpm : 1500

Rack travel in mm : 11.20...11.30

Del. quantity cm³/ : 8.9...9.0
 100 s: (8.7...9.2)

Spread cm³ : 0.3
 100 s: (0.5)

2nd speed rpm : 325.0
 Rack travel in mm : 10.0...10.2
 Del. quantity cm³/ : 4.8...5.4
 100 s: (4.6...5.6)

Spread cm³ : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1500
 Del. quantity : 89.5...90.5
 1000 : (87.5...92.5)

Spread cm³ : 3.00
 1000 : (5.00)

RATED SPEED

1st version
 Control lever
 position degrees: 54...62

Testing:
 1st rack travel in: 10.20
 Speed rpm : 1540...1550

2nd rack travel in: 4.00
Speed rpm : 1590...1620
3rd rack travel in: 4.00
Speed rpm : 595...1625
4th rack travel in: 1765
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 11...19
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 9.6

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 10.00...10.20
Rack travel in mm : 2.00
Speed rpm : 475...535

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1500
Rack travel in m: 11.20...11.30
2nd speed rpm : 500
Rack travel in m: 11.20...11.40

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.20
Speed rpm : 1540...1550

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 115.0...0.0
1000 s: (112.0...0.0)
Rack travel in mm : 16.80...0.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 G 3
Edition : 09.03.87
Replaces : 7.85
Test oil : ISO-4113

Combination no. : 0 400 864 054

Injection pump
Pump designation : PES4ABSD410/3RS2638
EP type number : 0 410 884 950
Governor
Governor design. : RSV325...1150AOC2168
L
Governor no. : 0 420 232 364

Customer-spec. information
Customer : KHD

Engine : BF4L913

1st version kW : 66.0
Rated speed : 2300
2nd version kW : 60.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1110

Rack travel in mm : 12.30...12.40

Del. quantity cm³/ : 8.0...8.1

100 s: (7.8...8.3)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 325.0
Rack travel in mm : 8.1...8.3
Del. quantity cm³/ : 0.9...1.5
100 s: (0.7...1.7)
Spread cm³ : 0.2
100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1110
Del. quantity : 80.0...81.0
1000 : (78.0...83.0)
Spread cm³ : 3.00
1000 : (4.50)

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:
1st rack travel in: 11.30
Speed rpm : 1155...1165
2nd rack travel in: 4.00

Speed rpm : 1250...1280
3rd rack travel in: 4.00
Speed rpm : 1320...1350
4th rack travel in: 1465
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 27...35
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 7.7
Speed rpm : 325
Rack travel in mm : 7.60...7.80
Rack travel in mm : 2.00
Speed rpm : 700...760

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1110
Rack travel in m: 12.30...12.40
2nd speed rpm : 500
Rack travel in m: 13.10...13.20
4th speed rpm : 940
Rack travel in m: 12.70...12.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del. quantity cm³/ : 79.5...81.5
1000 s: (77.0...84.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.30
Speed rpm : 1155...1165

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 100.0...110.0
1000 s: (97.0...113.0)
Rack travel in mm : 16.80...17.20

Remarks:

: S29=DX 92=DX4.70 (1)
: S28=DX 86=DX4.50 (2)

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 G 8
 Edition : 09.03.87
 Replaces : 5.84
 Test oil : ISO-4113

Combination no. : 0 400 864 055

Injection pump
 Pump designation : PES4A8SD410/3RS2610
 EP type number : 0 410 884 951
 Governor
 Governor design. : RSV325...1150A8C2163
 L
 Governor no. : 0 420 232 296

Customer-spec. information
 Customer : KHD

Engine : F4L913

1st version kW : 55.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

 Rack travel in mm : 11.30...11.40

 Del. quantity cm³/ : 6.8...6.9

 100 s : (6.6...7.1)

 Spread cm³ : 0.3

 100 s : (0.4)

 2nd speed rpm : 325.0
 Rack travel in mm : 9.1...9.3
 Del. quantity cm³/ : 1.5...1.9
 100 s : (1.3...2.1)
 Spread cm³ : 0.2
 100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : 4.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 68.0...69.0
 1000 : (66.0...71.0)
 Spread cm³ : 3.00
 1000 : (4.50)

RATED SPEED

1st version
 Control lever
 position degrees: 51...59

Testing:

1st rack travel in: 10.30
 Speed rpm : 1190...1200
 2nd rack travel in: 4.00
 Speed rpm : 1225...1255
 3rd rack travel in: 4.00

Speed rpm : 1245...1275
4th rack travel in: 1400
Speed rpm : 0.30...1.40

APPLICATION
Tractor (tractor engines)

LOW IDLE 1

Control lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 8.7

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 9.10...9.30
Rack travel in mm : 2.00
Speed rpm : 470...530

TORQUE CONTROL

Dimension a mm : 0.80
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 11.30...11.40
2nd speed rpm : 500
Rack travel in m: 12.10...12.20
3rd speed rpm : 800
Rack travel in m: 11.80...12.00
4th speed rpm : 900
Rack travel in m: 11.60...11.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del. quantity cm³/ : 58.0...61.0
1000 s: (55.5...63.5)
Spread cm³ : -
1000 s: (5.50)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 10.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 130.0...140.0
1000 s: (127.0...143.0)
Rack travel in mm : 19.50...21.00

Remarks:

: S16 = DX 80 = D4.30

C04

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 6,2 E 5
Edition : 11.12.87
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 866 121

Injection pump
Pump designation : PES6A90D320/3RS2660
EP type number : 0 410 896 078
Governor
Governor design. : RSV325...1100AOC2182
-2R
Governor no. : 0 420 233 211

Customer-spec. information
Customer : MWM

Engine : TD226B-6

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
: (2.90...3.10)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : -1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
& maximum rack tra: 21.00
Difference ° CS : 3.50...4.50

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.50...10.60

Del. quantity cm³/ : 8.9...9.0

100 s: (8.7...9.2)

Spread cm³ : 0.3

100 s: (0.5)

2nd speed rpm : 325.0
Rack travel in mm : 7.0...7.2
Del. quantity cm³/ : 2.2...2.8
100 s: (2.0...3.0)

Spread cm³ : 0.2
100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Aneroid pressure h: 700
Del. quantity : 89.5...90.5
1000 : (87.5...92.5)

Spread cm³ : 3.00
1000 : (5.00)

RATED SPEED

1st version
Control lever
position degrees: 41...49

Testing:

1st rack travel in: 9.50
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1170...1200
3rd rack travel in: 4.00
Speed rpm : 1210...1240
4th rack travel in: 1380
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.6

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 7.00...7.20
Rack travel in mm : 2.00
Speed rpm : 515...575

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.50...10.60
2nd speed rpm : 500
Rack travel in m: 10.50...10.70

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 10.50...10.60

Measurement

Speed 1/min : 500
1st pressure hPa : -
Rack travel in m: 9.60...9.70
2nd pressure hPa : 250
Rack travel in m: 10.10...10.20
3rd pressure hPa : 200
Rack travel in m: 9.80...10.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 64.0...66.0
1000 s: (62.0...68.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.50
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...140.0
1000 s: (127.0...143.0)
Rack travel in mm : 19.50...21.00

Remarks:

APPLICATION
Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 6,2 E 6
 Edition : 18.12.87
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 866 122
 Injection pump
 Pump designation : PES6A90D320/3RS2660
 EP type number : 0 410 896 078
 Governor
 Governor design. : RSV325...1200AOC2182
 -3R
 Governor no. : 0 420 233 212

Customer-spec. information
 Customer : MWM

Engine : TD226B-6

1st version kW : 123.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.95...3.05
 : (2.90...3.10)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : -1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 3.50...4.50

BASIC SETTING

1st speed rpm : 1180

 Rack travel in mm : 11.60...11.70

 Del. quantity cm³/ : 8.9...9.0

 100 s : (8.9...9.2)

 Spread cm³ : 0.2

 100 s : (0.4)

2nd speed rpm : 325.0
 Rack travel in mm : 7.1...7.3
 Del. quantity cm³/ : 1.0...1.6
 100 s : (0.8...1.8)
 Spread cm³ : 0.2
 100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1180
 Aneroid pressure h: 700
 Del. quantity : 89.0...90.0
 1000 : (87.0...92.0)
 Spread cm³ : 3.00
 1000 : (4.50)

RATED SPEED

1st version

Control lever
position degrees: 40...48

Testing:

1st rack travel in: 10.60
Speed rpm : 1220...1230
2nd rack travel in: 4.00
Speed rpm : 1240...1270
3rd rack travel in: 4.00
Speed rpm : 1260...1290
4th rack travel in: 1435
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 13...21
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.7

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 7.10...7.30
Rack travel in mm : 2.00
Speed rpm : 485...545

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1180
Rack travel in m: 11.60...11.70
2nd speed rpm : 500
Rack travel in m: 12.40...12.50
4th speed rpm : 890
Rack travel in m: 12.00...12.20

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 12.40...12.50

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.40...10.50
2nd pressure hPa : 400
Rack travel in m: 11.70...11.80
3rd pressure hPa : 210
Rack travel in m: 10.90...11.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 600
Del.quantity cm³/ : 92.0...94.0
1000 s: (89.5...96.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 59.5...61.5
1000 s: (57.5...63.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 10.60
Speed rpm : 1220...1230

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 128.0...138.0
1000 s: (125.0...141.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 6,2 E 7
Edition : 18.12.87
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 866 123
Injection pump
Pump designation : PES6A90D320/3RS2660
EP type number : 0 410 896 078
Governor
Governor design. : RSV325...1200AOC2182
-4R
Governor no. : 0 420 233 213

Customer-spec. information
Customer : MWM

Engine : TD226B-6

1st version kW : 107.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temperature, °C : 38...42

Overflow valve : 1 417 413 000

Inlet pressure, bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.95...3.05
: (2.90...3.10)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : -1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
& maximum rack tra: 21.00
Difference ° CS : 3.50...4.50

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 10.20...10.30

Del. quantity cm³/ : 7.7...7.8

100 s: (7.5...8.0)

Spread cm³ : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 7.0...7.2

Del. quantity cm³/ : 1.0...1.6

100 s: (0.8...1.8)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Aneroid pressure h: 700

Del. quantity : 77.5...78.5

1000 : (75.5...80.5)

Spread cm³ : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever
position degrees: 44...52

Testing:

1st rack travel in: 9.20
Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1265...1295
3rd rack travel in: 4.00
Speed rpm : 1290...1320
4th rack travel in: 1455
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.6

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 7.00...7.20
Rack travel in mm : 2.00
Speed rpm : 505...565

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 10.20...10.30
2nd speed rpm : 500
Rack travel in m: 11.00...11.10
4th speed rpm : 1010
Rack travel in m: 10.60...10.80

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 11.10...11.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.20...10.30
2nd pressure hPa : 250
Rack travel in m: 10.80...10.90
3rd pressure hPa : 180
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 600
Del.quantity cm3/ : 75.5...77.5
1000 s: (73.0...80.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 61.0...62.0
1000 s: (58.0...64.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 9.20
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 128.0...138.0
1000 s: (125.0...141.0)
Rack travel in mm : 19.50...21.00

Remarks:

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 M 10
Edition : 11.12.87
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 400 876 188

Injection pump
Pump designation : PES6A80D41ORS2085X
EP type number : 0 410 886 045
Governor
Governor design. : RSV350...1400A2C1052
L
Governor no. : 0 420 232 406

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM352

1st version kW : 80.9
Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Prestroke mm : 2.15...2.25
: (2.10...2.30)
Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1400

Rack travel in mm : 9.00...9.10

Del. quantity cm³/ : 5.2...5.3

100 s : (5.0...5.4)

Spread cm³ : 0.2

100 s : (0.4)

2nd speed rpm : 350.0

Rack travel in mm : 6.6...7.2

Del. quantity cm³/ : 1.0...1.2

100 s : (0.8...1.3)

Spread cm³ : 0.2

100 s : (0.3)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1400

Del. quantity : 52.0...53.0

1000 : (50.5...54.5)

Spread cm³ : 2.50

1000 : (4.00)

RATED SPEED

1st version

Control lever

position degrees: 48...56

Testing:

1st rack travel in: 8.00

Speed rpm : 1450...1455

2nd rack travel in: 4.00

Speed rpm : 1488...1510

3rd rack travel in: 4.00

Speed rpm : 1500...1530

4th rack travel in: 1680
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: -3

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Rack travel in mm : 2.00
Speed rpm : 600...660

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 9.00...9.10
2nd speed rpm : 500
Rack travel in m: 9.80...9.90
3rd speed rpm : 850
4th speed rpm : 950
Rack travel in m: 9.10...9.40

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 500
Del.quantity cm3/ : 47.0...49.0
1000 s: (45.0...51.0)
Speed rpm : 850
Del.quantity cm3/ : 50.0...53.0
1000 s: (48.0...55.0)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 78.0...88.0
1000 s: (75.0...91.0)
Rack travel in mm : 14.20...14.60

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.60...7.20
Del.quantity cm3/ : 10.0...12.0
1000 s: (8.5...13.5)
Spread cm3 : 2.00
1000 s: (3.50)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 E 4
Edition : 24.11.87
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 876 241
Injection pump
Pump designation : PES6A95D410RS2471
EP type number : 0 410 896 952
Governor
Governor design. : RSV325...1400ABC707L
Governor no. : 0 420 232 336

Customer-spec. information

Customer : KHD
Engine : BF6L913C

1st version kW : 140.0
Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 000
Inlet press., bar : 1.50
Test nozzle holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
Test lines : 1 680 750 014
Outside diameter
x Wall thickness
x Length mm : 6,00x2,00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27
Prestroke mm : 1,90...2,00
 : (1,85...2,05)
Rack travel in mm : 9,00...12,00

Firing order :
Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1400
Rack travel in mm : 9.20...9.30
Del. quantity cm³/ : 8.5...8.7
100 s : (8.3...8.9)
Spread cm³ : 0.35
100 s : (0.6)
2nd speed rpm : 325
Rack travel in mm : 6.40...6.60
Del. quantity cm³/ : 1.0...1.6
100 s : (0.7...1.8)
Spread cm³ : 0.35
100 s : (0.55)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 4.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1400
Aneroid pressure h : 700
Del. quantity : 85.5...87.5
1000 : (83.5...89.5)
Spread cm³ : 3.5
1000 : (6.0)

RATED SPEED

1st version
Control lever
position degrees: 62...70

Testing:
1st rack travel in: 8.20
Speed rpm : 1440...1450
2nd rack travel in: 4.00
Speed rpm : 1460...1490

3rd rack travel in: 4.00
Speed rpm : 1480...1510
4th rack travel in: 1645
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 14...22
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.00
Speed rpm : 325
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 560...620

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 9.20...9.30
2nd speed rpm : 500
Rack travel in m: 10.50...10.60
3rd speed rpm : 1050
Rack travel in m: 9.80...10.00

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.20
Speed rpm : 1440...1450

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 116.0...126.0
1000 s: (113.0...129.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 Q 14
Edition : 11.12.87
Replaces : 17.12.86
Test oil : ISO-4113

Combination no. : 0 400 876 255

Injection pump
Pump designation : PES6A90D41ORS2293
EP type number : 0 410 896 031
Governor
Governor design. : RSV350...1300AOC783L
Governor no. : 0 420 232 409

Customer-spec. information
Customer : DAIMLER-N-BENZ

Engine : OM 352 A

1st version kW : 110.3
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.15...2.25
: (2.10...2.30)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 11.40...11.50

Del. quantity cm³/ : 7.5...7.6

100 s : (7.3...7.8)

Spread cm³ : 0.3

100 s : (0.4)

2nd speed rpm : 350.0

Rack travel in mm : 7.1...7.7

Del. quantity cm³/ : 1.0...1.2

100 s : (0.8...1.4)

Spread cm³ : 0.2

100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300

Aneroid pressure h: 700

Del. quantity : 75.5...76.5

1000 : (73.5...78.5)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 63...71

Testing:

1st rack travel in: 10.40

Speed rpm : 1340...1345

2nd rack travel in: 4.00

Speed rpm : 1393...1406

3rd rack travel in: 4.00

Speed rpm : 1430...1460
4th rack travel in: 1600
Speed rpm : 0.30...1.70
5th rack travel in: 1345...1355
Speed rpm : 10.40

LOW IDLE 1
Control lever
position degrees: -3

Testing:
Speed rpm : 100
Minimum rack travel: 19.00
Rack travel in mm : 2.00
Speed rpm : 460...520

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1300
Rack travel in m: 11.40...11.50
3rd speed rpm : 800
Rack travel in m: 11.40...11.60
4th speed rpm : 1050
Rack travel in m: 11.40...11.60

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 11.50...11.60

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.60...10.70
2nd pressure hPa : 390
Rack travel in m: 11.40...11.50
3rd pressure hPa : 275
Rack travel in m: 10.80...11.00

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 500
Del.quantity cm³/ : 62.0...64.0
1000 s: (59.5...66.5)
Spread cm³ : -
1000 s: (5.5)
Aneroid pressure h: 700
Speed rpm : 800
Del.quantity cm³/ : 67.0...69.0
1000 s: (64.5...71.5)

Spread cm³ : -
1000 s: (5.50)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 50.0...52.0
1000 s: (47.5...54.5)
Spread cm³ : -
1000 s: (5.50)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 78.0...88.0
1000 s: (75.0...91.0)
Rack travel in mm : 15.10...15.50

LOW IDLE

Speed rpm : 350
Rack travel in mm : 7.10...7.70
Del.quantity cm³/ : 10.0...12.0
1000 s: (8.0...14.0)
Spread cm³ : 2.50
1000 s: (4.50)

Remarks:

Hydraulic latching of starting
delivery.

Latching at 0.4 bar ... 0.5 bar.

Unlatching at 0.15 bar...0.25 bar.

APPLICATION
Unimog

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 D 4
Edition : 11.12.87
Replaces : 12.11.87
Test oil : ISO-4113

Combination no. : 0 400 876 270

Injection pump
Pump designation : PES6A85D41QRS2537
EP type number : 0 410 886 908
Governor
Governor design. : RSV325...1150A8C2020
L
Governor no. : 0 420 232 345

Customer-spec. information
Customer : KHD

Engine : BF6L913

1st version kW : 106.6
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.90...2.00
: (1.85...2.05)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 11.00...11.10

Del. quantity cm³/ : 7.9...8.1

100 s : (7.7...8.3)

Spread cm³ : 0.3

100 s : (0.4)

2nd speed rpm : 325.0

Rack travel in mm : 6.8...7.0

Del. quantity cm³/ : 0.9...1.5

100 s : (0.7...1.7)

Spread cm³ : 0.2

100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 6.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h : 700

Del. quantity : 79.5...81.5

1000 : (77.5...83.5)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 56...64

Testing:

1st rack travel in: 10.00

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1240...1270

3rd rack travel in: 4.00
Speed rpm : 1270...1300
4th rack travel in: 1435
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 20...28
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 6.80...7.00
Rack travel in mm : 2.00
Speed rpm : 590...650

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 11.00...11.10
2nd speed rpm : 960
Rack travel in m: 11.70...11.90
3rd speed rpm : 500
Rack travel in m: 12.50...12.60

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 12.50...12.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.60...10.70
2nd pressure hPa : 350
Rack travel in m: 12.10...12.20
3rd pressure hPa : 150
Rack travel in m: 11.10...11.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 850
Del.quantity cm³/ : 88.0...91.0
1000 s: (86.0...93.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 60.0...63.0
1000 s: (58.0...65.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 17.40...18.00

Remarks:

:
Test electrically-released starting
quantity (EES) with 12 volts

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 x 9
Edition : 11.12.87
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 400 876 311

Injection pump
Pump designation : PES6A90D41ORS2569
EP type number : 0 410 896 071
Governor
Governor design. : RSV350...1250AOC1130
-1L
Governor no. : 0 420 232 427

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 352

1st version kW : 92.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
: (2.20...2.40)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.50...11.60

Del. quantity cm³/ : 6.7...6.8

100 s: (6.5...7.0)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 350.0

Rack travel in mm : 8.1...8.7

Del. quantity cm³/ : 1.0...1.2

100 s: (0.8...1.4)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 5.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 67.0...68.0

1000 : (65.0...70.0)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 59...67

Testing:

1st rack travel in: 10.50

Speed rpm : 1290...1295

2nd rack travel in: 4.00

Speed rpm : 1347...1360

3rd rack travel in: 4.00

Speed rpm : 1405...1445
4th rack travel in: 1550
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: -3

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Rack travel in mm : 2.00
Speed rpm : 560...620

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.50...11.60
2nd speed rpm : 600
Rack travel in m: 11.90...12.00
3rd speed rpm : 1050
Rack travel in m: 11.50...11.70

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm3/ : 56.0...58.0
1000 s: (53.5...60.5)
Speed rpm : 850
Del.quantity cm3/ : 63.0...65.0
1000 s: (60.5...67.5)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 78.0...88.0
1000 s: (75.0...91.0)
Rack travel in mm : 16.10...16.50

LOW IDLE

Speed rpm : 350
Rack travel in mm : 8.10...8.70
Del.quantity cm3/ : 10.0...12.0
1000 s: (8.0...14.0)
Spread cm3 : 2.50
1000 s: (4.50)

Remarks:
;

APPLICATION
Unimog

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 C 2
Edition : 11.12.87
Replaces : 13.5.87
Test oil : ISO-4113

Combination no. : 0 400 876 335

Injection pump
Pump designation : PES6A90D41ORS2710
EP type number : 0 410 896 082
Governor
Governor design. : RSV350...1200A1C1154
L
Governor no. : 0 420 232 468

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 366

1st version kW : 74.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
: (2.20...2.40)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 9.30...9.40

Del. quantity cm³/ : 5.1...5.2

100 s: (4.9...5.4)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 350.0

Rack travel in mm : 8.0...8.6

Del. quantity cm³/ : 1.0...1.2

100 s: (0.8...1.4)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Governor spring pre-tension
Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del. quantity : 51.0...52.0

1000 : (49.0...54.0)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 59...67

Testing:

1st rack travel in: 8.30

Speed rpm : 1240...1245

2nd rack travel in: 4.00

Speed rpm : 1261...1274

3rd rack travel in: 4.00

Speed rpm : 1300...1330

4th rack travel in: 1400

Speed rpm : 0.30...1.40

5th rack travel in: 1255...1265

Speed rpm : 8.30

LOW IDLE 1

Control lever
position degrees: -3

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Rack travel in mm : 2.00
Speed rpm : 465...525

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 9.30...9.40
2nd speed rpm : 600
Rack travel in m: 10.30...10.50
3rd speed rpm : 900
Rack travel in m: 9.80...10.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del. quantity cm3/ : 41.0...43.0
1000 s: (38.5...45.5)
Speed rpm : 900
Del. quantity cm3/ : 46.0...49.0
1000 s: (43.5...51.5)

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 78.0...88.0
1000 s: (75.0...91.0)
Rack travel in mm : 16.80...17.20

LOW IDLE

Speed rpm : 350
Rack travel in mm : 8.00...8.60
Del. quantity cm3/ : 10.0...12.0
1000 s: (8.0...14.0)
Spread cm3 : 2.50
1000 s: (4.50)

Remarks:

:

APPLICATION

Unimog

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 0 1
Edition : 07.01.88
Replaces : 2.11.87
Test oil : ISO-4113

Combination no. : 0 400 876 344

Injection pump
Pump designation : PES6A95D41ORS2625
EP type number : 0 410 896 926
Governor
Governor design. : RSV325...1250A2C1159
L
Governor no. : 0 420 232 490

Customer-spec. information
Customer : KHD

Engine : BF6L913C

1st version kW : 130.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.90...2.00
(1.85...2.05)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.10...11.20

Del. quantity cm³/ : 8.9...9.0
100 s : (8.7...9.2)

Spread cm³ : 0.3
100 s : (0.6)

2nd speed rpm : 350.0
Rack travel in mm : 6.4...6.6
Del. quantity cm³/ : 1.0...1.6
100 s : (0.7...1.8)

Spread cm³ : 0.3
100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1250
Aneroid pressure h : 900
Del. quantity : 89.0...90.0
1000 : (87.0...92.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 40...48

Testing:
1st rack travel in: 10.10
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1320...1350

3rd rack travel in: 4.00
Speed rpm : 1345...1375
4th rack travel in: 1540
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 13...21
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 350
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.00
Speed rpm : 515...565

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.10...11.20
2nd speed rpm : 500
Rack travel in m: 11.10...11.30

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 11.10...11.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.20...10.30
2nd pressure hPa : 400
Rack travel in m: 10.90...11.00
3rd pressure hPa : 330
Rack travel in m: 10.50...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 54.0...56.0
1000 s: (52.0...58.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.10
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 17.10...17.30

Remarks:

APPLICATION

Combine-harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 H11
Edition : 14.01.88
Replaces : 6.11.87
Test oil : ISO-4113

Combination no. : 0 400 876 347

Injection pump
Pump designation : PES6A100D41ORS2676
EP type number : 9 410 230 023
Governor
Governor design. : RSV600...1100A2C2161
-5L
Governor no. : 0 420 232 495

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466AZ-02

1st version kW : 130.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

C25

Prestroke mm : 2.45...2.55
: (2.40...2.60)
Rack travel in mm : 10.50...10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.10...10.20

Del. quantity cm³/ : 11.1...11.3

100 s: (10.9...11.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 600.0
Rack travel in mm : 4.4...4.6
Del. quantity cm³/ : 1.1...1.5
100 s: (0.8...1.7)
Spread cm³ : 0.7
100 s: (0.9)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Aneroid pressure h: 500
Del. quantity : 111.0...113.0
1000 : (109.0...115.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 42...50

Testing:
1st rack travel in: 9.10
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1195...1205
4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 23...31
Setting point w/out bumper spring
Speed rpm : 600
Rack travel in mm : 4.0

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 600
Rack travel in mm : 3.90...4.10
Rack travel in mm : 2.00
Speed rpm : 690...750

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.10...10.20
2nd speed rpm : 950
Rack travel in m: 10.80...11.00

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 93
Contr.-rod trav.mm: 9.00...9.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.30...8.50
2nd pressure hPa : 146
Rack travel in m: 9.80...10.20
3rd pressure hPa : 500
Rack travel in m: 10.80...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 500
Speed rpm : 950
Del.quantity cm³/ : 119.0...122.0
1000 s: (116.5...124.5)
Speed rpm : 750

Spread cm³ : 4.00
1000 s: (4.00)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : -
1000 s: (66.0...74.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.10
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 190.0...210.0
1000 s: (185.0...215.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 600
Rack travel in mm : 4.40...4.60
Del.quantity cm³/ : 11.0...15.0
1000 s: (8.5...17.5)
Spread cm³ : 7.00
1000 s: (9.00)

Remarks:

: JOHN DEERE - RE32396
Setting without torque-control spring
retainer with 1 mm control-rod travel
less. Raising of full-load delivery
with torque-control spring retainer to
10.1 mm control-rod travel.

Start-of-delivery mark = 15.5° after
start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : HAN 10,8 F4
Edition : 18.12.87
Replaces : 12.9.86
Test oil : IS0-4113

Combination no. : 0 401 076 006

Injection pump
Pump designation : PE6A100D32ORS3030
EP type number : 0 411 006 018
Governor
Governor design. : RSV350...1100A8C1119
R
Governor no. : 0 420 233 179

Customer-spec. information
Customer : HANOMAG

Engine : D963A2

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 003

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.80...1.90
: (1.75...1.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
& maximum rack tra: 21.00
Difference ° CS : 5.50...6.50

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.50...11.60

Del. quantity cm³/ : 15.0...15.2

100 s: (14.8...15.4)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0
Rack travel in mm : 6.8...7.0
Del. quantity cm³/ : 1.8...2.4
100 s: (1.6...2.7)
Spread cm³ : 0.3
100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Del. quantity : 150.0...152.0
1000 : (148.0...154.0)
Spread cm³ : 3.00
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 52...60

Testing:

1st rack travel in: 10.50
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1355
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 20...28
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 350
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 435...495
Speed rpm : 550
Maximum rack trave: 1.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.50...11.60
2nd speed rpm : 550
Rack travel in m: 11.50...11.70
3rd speed rpm : 400
Rack travel in m: 12.70...13.30

BREAKAWAY

1st version
1min rack travel less than
full load rack tr: 10.50
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19.00...21.00

Remarks:

:

Cold-start testing of RSV governor
according to VDT-I-420/114.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : HAN 10,8 FS
Edition : 18.12.87
Replaces : 17.12.86
Test oil : ISO-4113

Combination no. : 0 401 076 007

Injection pump
Pump designation : PE6A100D320RS3030-1
EP type number : 0 411 006 019
Governor
Governor design. : RSV350...1100A8C2217
R
Governor no. : 0 420 232 462

Customer-spec. information
Customer : HANOMAG

Engine : D964T

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 003

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.80...1.90
: (1.75...1.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
& maximum rack tra: 21.00
Difference ° CS : 5.50...6.50

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.20...10.30

Del. quantity cm³/ : 12.6...12.8

100 s: (12.4...13.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0
Rack travel in mm : 6.6...6.8
Del. quantity cm³/ : 1.5...2.1
100 s: (1.2...2.3)
Spread cm³ : 0.3
100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 5.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Del. quantity : 126.0...128.0
1000 : (124.0...130.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 53...61

Testing:

Cold-start testing of RSV governor
according to VDT-I-420/114.

1st rack travel in: 9.20
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1175...1205
3rd rack travel in: 4.00
Speed rpm : 1210...1240
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 22...30
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.2

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 350
Rack travel in mm : 6.60...6.80
Rack travel in mm : 2.00
Speed rpm : 500...560

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.20...10.30
2nd speed rpm : 500
Rack travel in m: 11.10...11.20
4th speed rpm : 940
Rack travel in m: 10.50...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del. quantity cm³/ : 140.0...143.0
1000 s: (137.5...145.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 225.0...235.0
1000 s: (222.0...238.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 B 1
Edition : 14.01.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 276 049

Injection pump
Pump designation : PES6A100D41ORS3034
EP type number : 0 411 206 016
Governor
Governor design. : RSV600...1100A2C2080
L
Governor no. : 9 420 234 159

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466 A

1st version kW : 152.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 27...29

Prestroke mm : 1.95...2.05
: (1.90...2.10)

Rack travel in mm : 10.50...10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.70...11.80

Del. quantity cm³/ : 12.9...13.1

100 s : (12.7...13.3)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 600.0

Rack travel in mm : 4.5...4.7

Del. quantity cm³/ : 1.3...1.7

100 s : (1.1...1.8)

Spread cm³ : 0.4

100 s : (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 129.0...131.0

1000 : (127.0...133.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 33...41

Testing:

1st rack travel in: 10.70

Speed rpm : 1145...1155

2nd rack travel in: 4.00

Speed rpm : 1195...1225

4th rack travel in: 1250

Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 15...24
Setting point w/out bumper spring
Speed rpm : 600
Rack travel in mm : 4.1

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 600
Rack travel in mm : 4.50...4.70
Rack travel in mm : 2.00
Speed rpm : 635...695

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : -
Contr.-rod trav.mm: 8.60...8.70

Measurement
Speed 1/min : 500

1st pressure hPa : 333
Rack travel in m: 11.55...11.65
2nd pressure hPa : 233
Rack travel in m: 10.75...11.15

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : -
1000 s: (65.0...75.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.70
Speed rpm : 1145...1155

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100

D04

Del.quantity cm³/ : 170.0...190.0
1000 s: (165.0...195.0)
Rack travel in mm : 19.00...21.00

HIGH IDLE

1st version
Speed rpm : 1200
Rack travel in mm : 4.70...4.90

LOW IDLE

Speed rpm : 600
Rack travel in mm : 4.50...4.70
Del.quantity cm³/ : 13.0...17.0
1000 s: (11.5...18.5)
Spread cm³ : 4.00
1000 s: (7.50)

Remarks:
: JOHN DEERE - RE23751
Start-of-delivery mark is at 15°
angular displacement of the cam after
start of delivery at cylinder 1 with
control-rod travel 9.00...12.00 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 19,1 N 4
Edition : 15.01.88
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 401 840 103

Injection pump
Pump designation : PE12P110A32OLS854-1
EP type number : 0 411 810 045
Governor
Governor design. : RQ750PA374R
Governor no. : 0 421 801 074

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM404A

1st version kW : 312.0
Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 150...170

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
: (3.15...3.35)

Rack travel in mm : 9.00...12.00

DOS

Firing order : 12- 1- 5- 9- 8- 3-
4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
180-225-240-285-300-
345

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 14.00...14.10

Del. quantity cm³/ : 15.6...15.8

100 s: (15.3...16.1)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 7.5...7.7

Del. quantity cm³/ : 1.3...1.8

100 s: (1.0...2.0)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 156.0...158.0

1000 : (153.0...161.0)

Spread cm³ : 4.00

1000 : (8.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 13.00

Speed rpm : 750...755

2nd rack travel in: 5.40

Speed rpm : 785...795

4th rack travel in: 850

Speed rpm : 0.00...1.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.00
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 145.0...165.0
1000 s: (141.0...169.0)

Remarks:

:

APPLICATION
Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : BET 8,8 B 1
Edition : 18.12.87
Replaces : 7.84
Test oil : ISO-4113

Combination no. : 0 401 846 489

Injection pump
Pump designation : PE6P120A32ORS377
EP type number : 0 411 826 108
Governor
Governor design. : RGV275...1200PA42S-2
Governor no. : 0 421 813 403

Customer-spec. information
Customer : RVI

Engine : MIDS 062030

1st version kW : 158.1
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6,00X1,50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 12.60...12.70

Del. quantity cm³/ : 15.0...15.2

100 s : (14.7...15.5)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 5.4...5.6

Del. quantity cm³/ : 1.1...1.7

100 s : (0.8...2.0)

Spread cm³ : 0.8

100 s : (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 275
travel mm : 1.00...1.20

2nd speed rpm : 425
travel mm : 3.00...3.50

3rd speed rpm : 900
travel mm : 5.60...5.90

4th speed rpm : 1200
travel mm : 7.60...7.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Aneroid pressure h: 700

Del. quantity : 150.0...152.0

1000 : (147.0...155.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 60...68

Testing:
1st rack travel in: 11.60
Speed rpm : 1245...1255
2nd rack travel in: 4.00
Speed rpm : 1375...1405
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 6...14

Testing:
Speed rpm : 200
Minimum rack travel: 8.10
Speed rpm : 275
Rack travel in mm : 5.40...5.60

CONSTANT REGULATION
Speed rpm : 275...375

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 12.60...12.70

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 6.60...6.70
2nd pressure hPa : 190
Rack travel in m: 12.20...12.30
3rd pressure hPa : 160
Rack travel in m: 11.50...11.70

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 350

Del.quantity cm³/ : 51.0...55.0
1000 s: (48.0...58.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: -1.00
Speed rpm : 1245...1255

STARTING FUEL DELIVERY

Speed rpm : 100

LOW IDLE

Speed rpm : 275
Rack travel in mm : -7.00...-7.20
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.0...20.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:

APPLICATION
Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 13,8 A5
Edition : 11.12.87
Replaces : 7.84
Test oil : ISO-4113

Combination no. : 0 401 846 496

Injection pump
Pump designation : PE6P120A72ORS167
EP type number : 0 411 826 053
Governor
Governor design. : RQ225/1100PA703
Governor no. : 0 421 801 250

Customer-spec. information
Customer : IVECO-FIAT

Engine : 8210.02

1st version kW : 184.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.10...11.20

Del. quantity cm³/ : 17.0...17.3

100 s : (16.7...17.6)

Spread cm³ : 0.5

100 s : (0.8)

2nd speed rpm : 225.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.7...2.3

100 s : (1.4...2.6)

Spread cm³ : 0.8

100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 170.0...173.0

1000 : (167.0...176.0)

Spread cm³ : 5.00

1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 10.10

Speed rpm : 1145...1160

2nd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 225
Rack travel in mm : 6.5

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 225
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 340...380

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.10...11.20
2nd speed rpm : 550
Rack travel in m: 11.10...11.30

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.10
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 B 4
Edition : 15.01.88
Replaces : 6.11.87
Test oil : ISO-4113

Combination no. : 0 401 846 497

Injection pump
Pump designation : PE6P120A32ORS438-1
EP type number : 0 411 826 133
Governor
Governor design. : RQV275...1200PA648-2
Governor no. : 0 421 813 490

Customer-spec. information
Customer : RVI

Engine : MIDS062030

1st version kW : 150.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 10.20...10.30

Del. quantity cm³/ : 13.3...13.5

100 s : (13.0...13.8)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.5...2.1

100 s : (1.2...2.4)

Spread cm³ : 0.8

100 s : (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 275

travel mm : 1.20...1.40

2nd speed rpm : 450

travel mm : 3.30...4.00

3rd speed rpm : 850

travel mm : 5.90...6.20

4th speed rpm : 1200

travel mm : 8.20...8.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1230

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del. quantity : 133.0...135.0

1000 : (130.0...138.0)

Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:

1st rack travel in: 9.20
Speed rpm : 1255...1265
2nd rack travel in: 3.90
Speed rpm : 1355...1385
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 200
Minimum rack trave: 7.30
Speed rpm : 275
Rack travel in mm : 4.90...5.10

CONSTANT REGULATION

Speed rpm : 275...360

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 116.0...122.0
1000 s: (113.0...125.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: -1.00
Speed rpm : 1255...1265

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 105.0...125.0
1000 s: (101.0...129.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : -5.10...-5.30

Remarks:

:
Start-of-delivery mark at the "INJ"
marking

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,6 B
Edition : 09.03.87
Replaces : 10.85
Test oil : ISO-4113

Combination no. : 0 401 846 507

Injection pump
Pump designation : PE6P100A72ORS473
EP type number : 0 411 806 196
Governor
Governor design. : RQV300...1100PA740
Governor no. : 0 421 813 472

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 355

1st version kW : 177.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...0

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 13.10...13.20

Del. quantity cm³/ : 12.5...12.7

100 s: (12.3...12.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 7.9...8.1

Del. quantity cm³/ : 1.2...1.8

100 s: (0.9...2.0)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1160

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 125.0...127.0

1000 : (123.0...129.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 61...69

Testing:

1st rack travel in: 12.10

Speed rpm : 1140...1150

2nd rack travel in: 4.00

Speed rpm : 1195...1225

4th rack travel in: 1350
Speed rpm : 0.00...1.50

LOW IDLE 1
Control lever
position degrees: 18...26

Testing:
Speed rpm : 100
Minimum rack travel: 9.60
Speed rpm : 300
Rack travel in mm : 7.90...8.10

CONSTANT REGULATION
Speed rpm : 300...500

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del. quantity cm³/ : 117.0...121.0
1000 s: (114.5...123.5)
Spread cm³ : 5.00
1000 s: (7.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.10
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 S
Edition : 07.01.88
Replaces : 6.11.87
Test oil : ISO-4113

Combination no. : 0 401 846 529

Injection pump
Pump designation : PE6P120A32ORS3186
EP type number : 0 411 826 756
Governor
Governor design. : RQV250..102SPA657-13
Governor no. : 0 421 813 592

Customer-spec. information
Customer : VOLVO

Engine : TD102F

1st version kW : 220.0
Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.40...11.50

Del. quantity cm³/ : 19.7...19.9

100 s: (19.4...20.2)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 3.9...4.1

Del. quantity cm³/ : 1.7...2.2

100 s: (1.4...2.4)

Spread cm³ : 0.5

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.20...1.30

2nd speed rpm : 430
travel mm : 3.50...3.80

3rd speed rpm : 700
travel mm : 6.40...6.60

4th speed rpm : 900
travel mm : 6.40...6.60

5th speed rpm : 1080
travel mm : 8.30...8.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1080

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1000

Del. quantity : 197.0...199.0
1000 : (194.0...202.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 58...66

Testing:

1st rack travel in: 10.40
Speed rpm : 1055...1065
2nd rack travel in: 4.00
Speed rpm : 1110...1140
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 4...12

Testing:

Speed rpm : 100
Minimum rack travel: 5.40
Speed rpm : 250
Rack travel in mm : 3.90...4.10

CONSTANT REGULATION

Speed rpm : 250...350

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav. mm: 11.40...11.50

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.80...9.00
2nd pressure hPa : 80
Rack travel in m: 9.20...9.30
3rd pressure hPa : 400
Rack travel in m: 11.10...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del. quantity cm³/ : 143.0...145.0
1000 s: (140.0...148.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 1055...1065

LOW IDLE

Speed rpm : 250
Rack travel in mm : 3.90...4.10
Del. quantity cm³/ : 17.0...22.0
1000 s: (14.5...24.5)
Spread cm³ : 5.00
1000 s: (7.00)

Remarks:

:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VAL 7,2 B
Edition : 18.12.87
Replaces : 9.3.87
Test oil : ISO-4113

Combination no. : 0 401 846 532

Injection pump
Pump designation : PE6P11DA32ORS856
EP type number : 0 411 816 170
Governor
Governor design. : RQV250...1150PA825
Governor no. : 0 421 813 570

Customer-spec. information
Customer : VALMET

Engine : 612 DSJ

1st version kW : 165.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 13.9...14.1

100 s : (13.6...14.4)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 325.0

Rack travel in mm : 6.1...6.3

Del. quantity cm³/ : 1.2...1.6

100 s : (0.9...1.8)

Spread cm³ : 0.3

100 s : (0.6)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325
travel mm : 2.00...2.10

2nd speed rpm : 380
travel mm : 2.30...2.70

3rd speed rpm : 470
travel mm : 2.90...3.40

4th speed rpm : 1200
travel mm : 8.10...8.20

5th speed rpm : 1310
travel mm : 9.10...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1240

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h : 700

Del. quantity : 139.0...141.0

1000 : (136.0...144.0)

Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 48...56

Testing:
1st rack travel in: 11.00
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1290...1320
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 16...24

Testing:
Speed rpm : 100
Minimum rack travel: 7.70
Speed rpm : 325
Rack travel in mm : 6.10...6.30

CONSTANT REGULATION

Speed rpm : 325...500

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 12.00...12.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.30...10.50
2nd pressure hPa : 415
Rack travel in m: 11.60...11.70
3rd pressure hPa : 270
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 700
Del. quantity cm³/ : 102.5...105.5
1000 s: (100.0...108.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 200.0...220.0
1000 s: (196.0...224.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 325
Rack travel in mm : 6.10...6.30
Del. quantity cm³/ : 12.0...16.0
1000 s: (9.5...18.5)
Spread cm³ : 3.00
1000 s: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 7,1 A 3
 Edition : 22.01.88
 Replaces : 2.11.87
 Test oil : ISO-4113

Combination no. : 0 401 846 534

Injection pump
 Pump designation : PE6P110A32ORS483-4
 EP type number : 0 411 816 172
 Governor
 Governor design. : RQV250...1200PA499-5
 Governor no. : 0 421 813 577

Customer-spec. information
 Customer : VOLVO

Engine : TD71FD

1st version kW : 158.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.80...11.90

Del. quantity cm³/ : 12.0...12.2

100 s : (11.7...12.5)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del. quantity cm³/ : 1.6...2.0

100 s : (-)

Spread cm³ : 0.3

100 s : (0.6)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.10...1.30

2nd speed rpm : 380
 travel mm : 2.30...2.60

3rd speed rpm : 500
 travel mm : 2.90...3.30

4th speed rpm : 1260
 travel mm : 7.70...7.90

5th speed rpm : 1400
 travel mm : 9.00...9.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1330

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h : 900

Del. quantity : 120.0...122.0

1000 : (117.0...125.0)

Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 54...62

Testing:

1st rack travel in: 10.80
Speed rpm : 1260...1270
2nd rack travel in: 4.00
Speed rpm : 1390...1420
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 6...14

Testing:

Speed rpm : 100
Minimum rack travel: 6.80
Speed rpm : 250
Rack travel in mm : 5.30...5.50

CONSTANT REGULATION

Speed rpm : 250...480

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 11.80...11.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.20...10.30
2nd pressure hPa : 545
Rack travel in m: 11.60...11.70
3rd pressure hPa : 230
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm³/ : 85.0...88.0
1000 s: (82.0...91.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.80
Speed rpm : 1260...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.30...5.50
Del.quantity cm³/ : 16.0...20.0
Spread cm³ : 3.00
1000 s: (6.00)

Remarks:

:
Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 11,9 A1
Edition : 18.12.87
Replaces : 9.10.87
Test oil : ISO-4113

Combination no. : 0 401 846 543

Injection pump
Pump designation : PE6P110A72ORS380
EP type number : 0 411 816 126
Governor
Governor design. : RQV250...1000PA434-4
Governor no. : 0 421 813 659

Customer-spec. information
Customer : RVI

Engine : BSR 36 F

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 15.40...15.50

Del. quantity cm³/ : 19.4...19.7
100 s : (19.1...19.9)

Spread cm³ : 0.4
100 s : (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 7.6...8.0

Del. quantity cm³/ : 1.4...1.9
100 s : (1.1...2.1)

Spread cm³ : 0.4
100 s : (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.70...2.00

2nd speed rpm : 850
travel mm : 6.00...6.40

3rd speed rpm : 1000
travel mm : 7.30...7.50

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 900

Del. quantity : 194.0...197.0
1000 : (191.5...199.5)

Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 62...70

Testing:

1st rack travel in: 14.40
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 11...19

Testing:

Speed rpm : 100
Minimum rack travel: 9.30
Speed rpm : 250
Rack travel in mm : 7.60...8.00

CONSTANT REGULATION

Speed rpm : 345...465

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 15.40...15.50

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.80...13.00
2nd pressure hPa : 400
Rack travel in m: 15.10...15.20
3rd pressure hPa : 250
Rack travel in m: 13.40...13.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 700
Del.quantity cm³/ : 198.0...204.0
1000 s: (195.0...207.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 141.0...144.0
1000 s: (138.5...146.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 14.40
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100

Remarks: :

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 A
Edition : 15.01.88
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 846 544
Injection pump
Pump designation : PE6P100A820LS130
EP type number : 0 411 806 179
Governor
Governor design. : RQ250/1050PA627-1
Governor no. : 0 421 801 407

Customer-spec. information
Customer : ENASA

Engine : 95 A1 BZ,

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Test nozzle holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
Test lines : 1 680 750 015
Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1030
Rack travel in mm : 12.00...12.10
Del. quantity cm³/ : 11.8...12.0
100 s: (11.6...12.2)
Spread cm³ : 0.3
100 s: (0.6)
2nd speed rpm : 250.0
Rack travel in mm : 7.9...8.1
Del. quantity cm³/ : 1.8...2.2
100 s: (1.5...2.4)
Spread cm³ : 0.3
100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 600
Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1030
Del. quantity : 118.0...120.0
1000 : (116.0...122.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version

Setting point:
Speed rpm : 600
Rack travel in mm : 16.0

Testing:

1st rack travel in: 11.00
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 350...390

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 260.0...280.0
1000 s: (256.0...284.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 B
 Edition : 15.01.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 546
 Injection pump
 Pump designation : PE6P100A820LS130
 EP type number : 0 411 806 179
 Governor
 Governor design. : RQV250...1050PA807-1
 Governor no. : 0 421 813 665

Customer-spec. information
 Customer : ENASA

Engine : 95 A1 BX

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27
 Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1030

 Rack travel in mm : 12.00...12.10

 Del. quantity cm³/ : 11.9...12.1

 100 s : (11.7...12.3)

 Spread cm³ : 0.3

 100 s : (0.6)

 2nd speed rpm : 250.0
 Rack travel in mm : 7.9...8.1
 Del. quantity cm³/ : 1.8...2.2
 100 s : (1.5...2.4)
 Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 0.90...1.30
 2nd speed rpm : 350
 travel mm : 1.60...2.20
 3rd speed rpm : 700
 travel mm : 4.40...5.00
 4th speed rpm : 1095
 travel mm : 7.90...8.10
 5th speed rpm : 1185
 travel mm : 8.80...9.20

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1120
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1030
 Del. quantity : 119.0...121.0
 1000 : (117.0...123.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 41...49

Testing:
1st rack travel in: 11.00
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 10...18

Testing:
Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 250...400

START CUT-OUT

Speed 1/min : 170 (150)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.00
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 260.0...280.0
1000 s: (256.0...284.0)
Rack travel in mm : 19.50...21.00

Remarks:
:

APPLICATION
Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 C
Edition : 22.01.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 547

Injection pump
Pump designation : PE6P110A820LS513
EP type number : 0 411 816 174
Governor
Governor design. : RQV250...1000PA811
Governor no. : 0 421 813 556

Customer-spec. information
Customer : ENASA

Engine : 95 R1 AX

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.25)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 12.80...12.90

Del. quantity cm³/ : 17.6...17.8

100 s: (17.3...18.1)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 250.0
Rack travel in mm : 6.6...6.8
Del. quantity cm³/ : 1.8...2.3
100 s: (1.5...2.5)
Spread cm³ : 0.4
100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.40
2nd speed rpm : 400
travel mm : 2.20...2.80
3rd speed rpm : 650
travel mm : 4.50...5.10
4th speed rpm : 1050
travel mm : 8.50...8.70
5th speed rpm : 1140
travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1040
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 900
Aneroid pressure h: 900
Del. quantity : 176.0...178.0
1000 : (173.0...181.0)
Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version

Control lever
position degrees: 41...49

Testing:

1st rack travel in: 11.80
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 9...17

Testing:

Speed rpm : 100
Minimum rack travel: 8.20
Speed rpm : 250
Rack travel in mm : 6.60...6.80

CONSTANT REGULATION

Speed rpm : 250...380

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 12.80...12.90
2nd speed rpm : 600
Rack travel in m: 13.00...13.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 13.00...13.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.90...11.20
2nd pressure hPa : 440
Rack travel in m: 12.50...12.60
3rd pressure hPa : 290
Rack travel in m: 11.50...11.70

START CUT-OUT

Speed 1/min : 170 (150)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900

D28

Speed rpm : 600
Del.quantity cm3/ : 178.0...182.0
1000 s: (175.0...185.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 131.0...135.0
1000 s: (128.0...138.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.80
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:

:

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 12,0 A
 Edition : 22.01.88
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 846 548

Injection pump
 Pump designation : PE6P120A32ORS257
 EP type number : 0 411 826 075
 Governor
 Governor design. : RQ250/1100PA877
 Governor no. : 0 421 801 409

Customer-spec. information
 Customer : ENASA

Engine : 9156.13V1

1st version kW : 228
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1080

Rack travel in mm : 11.40...11.50

Del. quantity cm³/ : 22.2...22.4

100 s : (21.9...22.7)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 5.5...5.7

Del. quantity cm³/ : 1.7...2.3

100 s : (1.4...2.6)

Spread cm³ : 0.8

100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1080

Aneroid pressure h: 900

Del. quantity : 222.0...224.0

1000 : (219.0...227.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 10.40

Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.6

Testing:

Speed rpm : 100
Minimum rack travel: 7.10
Speed rpm : 250
Rack travel in mm : 5.50...5.70

CONSTANT REGULATION

Speed rpm : 250...410

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1080
Rack travel in m: 11.40...11.50
2nd speed rpm : 600
Rack travel in m: 11.70...12.00
3rd speed rpm : 730
Rack travel in m: 11.40...11.70

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 12.20...12.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.90...10.00
2nd pressure hPa : 380
Rack travel in m: 10.40...10.50
3rd pressure hPa : 500
Rack travel in m: 11.10...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 600
Del.quantity cm³/ : 209.0...215.0
1000 s: (206.0...218.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 160.0...162.0
1000 s: (157.0...165.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...155.0
1000 s: (131.0...159.0)
Rack travel in mm : 19.50...21.00

Remarks:

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 Q6
Edition : 11.12.87
Replaces : 9.10.87
Test oil : ISO-4113
Combination no. : 0 401 846 784
Injection pump
Pump designation : PE6P110A32ORS3108V
EP type number : 0 411 816 737
Governor
Governor design. : RQV250...1100PA649
Governor no. : 0 421 813 346

Customer-spec. information
Customer : VOLVO

Engine : B10/THD101FD

1st version kW : 210,0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
: (2.95...3.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.70...13.80

Del. quantity cm³/ : 18.0...18.2

100 s: (17.7...18.5)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 250,0

Rack travel in mm : 5.3...5.5

Del. quantity cm³/ : 3.0...3.4

100 s: (2.7...3.6)

Spread cm³ : 0.3

100 s: (0.6)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.10...1.30

2nd speed rpm : 500
travel mm : 4.10...4.90

3rd speed rpm : 700
travel mm : 6.30...6.70

4th speed rpm : 950
travel mm : 6.30...6.70

5th speed rpm : 1100
travel mm : 7.00...7.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1175

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del. quantity : 180.0...182.0

1000 : (177.0...185.0)

Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:
1st rack travel in: 12.70
Speed rpm : 1160...1170
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 7...15

Testing:
Speed rpm : 100
Minimum rack travel: 6.80
Speed rpm : 250
Rack travel in mm : 5.30...5.50
Rack travel in mm : 2.00
Speed rpm : 345...405

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 1200
Contr.-rod trav. mm: 13.70...13.80

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.60...9.90
2nd pressure hPa : 300
Rack travel in m: 10.00...10.10
3rd pressure hPa : 870
Rack travel in m: 13.10...13.30

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 700
Del. quantity cm³/ : 106.0...108.0
1000 s: (103.0...111.0)

BREAKAWAY

E04

1st version
1mm rack travel less than

full load rack tr: 12.70
Speed rpm : 1160...1170

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 160.0...190.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.30...5.50
Del. quantity cm³/ : 30.0...34.0
1000 s: (27.5...36.5)
Spread cm³ : 3.00
1000 s: (6.00)

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

APPLICATION
Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 E 8
 Edition : 15.01.88
 Replaces : 9.3.87
 Test oil : ISO-4113

Combination no. : 0 401 846 801

Injection pump
 Pump designation : PE6P120A320LS3810-10
 EP type number : 0 411 826 734
 Governor
 Governor design. : RQV350...1150PA720-3
 Governor no. : 0 421 813 624

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : 0M421A

1st version kW : 184.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 11.00...11.10

Del. quantity cm³/ : 16.3...16.5

100 s: (16.0...16.8)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 4.8...5.0

Del. quantity cm³/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 1.60...1.80

2nd speed rpm : 600
 travel mm : 3.60...3.80

3rd speed rpm : 1200
 travel mm : 8.00...8.30

4th speed rpm : 1300
 travel mm : 9.10...9.60

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1250

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150

Aneroid pressure h: 700
Del. quantity : 163.0...165.0
1000 : (160.0...168.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 58...66

Testing:

1st rack travel in: 10.00
Speed rpm : 1175...1185
2nd rack travel in: 4.00
Speed rpm : 1260...1290
4th rack travel in: 1360
Speed rpm : 0.00...1.50

LOW IDLE 1

Control lever
position degrees: 7...15

Testing:

Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 350
Rack travel in mm : 4.80...5.00

CONSTANT REGULATION

Speed rpm : 350...500

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 11.00...11.10
2nd speed rpm : 850
Rack travel in m: 11.30...11.50
3rd speed rpm : 950
Rack travel in m: 11.10...11.30

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : -
Contr.-rod trav. mm: 10.60...10.90

Measurement

Speed 1/min : 500

1st pressure hPa : 450
Rack travel in m: 10.90...11.10

START CUT-OUT

E06

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 600
Del. quantity cm³/ : 170.0...176.0
1000 s: (167.0...179.0)
Spread cm³ : 8.00
1000 s: (12.0)

Aneroid pressure h: 700
Speed rpm : 1150
Del. quantity cm³/ : 128.0...131.0 *
1000 s: (125.0...134.0)
Spread cm³ : 8.00
1000 s: (12.0)

Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 146.0...148.0
1000 s: (143.0...151.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1175...1185

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 12,2 A1
 Edition : 11.12.87
 Replaces : 12.9.86
 Test oil : ISO-4113

Combination no. : 0 401 846 826

Injection pump
 Pump designation : PE6P120A32ORS3178
 EP type number : 0 411 826 752
 Governor
 Governor design. : RQV250...102SPA657-10
 Governor no. : 0 421 813 567

Customer-spec. information
 Customer : VOLVO

Engine : TD122FS

1st version kW : 287.0
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter x Wall thickness x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

E07

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 14.00...14.10

Del. quantity cm³/ : 25.2...25.4
 100 s: (24.9...25.7)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 250.0
 Rack travel in mm : 4.8...5.1
 Del. quantity cm³/ : 1.8...2.3
 100 s: (1.5...2.5)

Spread cm³ : 0.5
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1090
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Aneroid pressure h: 1200
 Del. quantity : 252.0...254.0
 1000 : (249.0...257.0)

Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Control lever
 position degrees: 61...69

Testing:
 1st rack travel in: 13.00
 Speed rpm : 1055...1065

2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 6...14

Testing:

Speed rpm : 100
Minimum rack travel: 6.40
Speed rpm : 250
Rack travel in mm : 4.80...5.10

CONSTANT REGULATION

Speed rpm : 250...400

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 1200
Contr.-rod trav.mm: 14.00...14.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.90...10.10
2nd pressure hPa : 90
Rack travel in m: 10.20...10.30
3rd pressure hPa : 870
Rack travel in m: 13.70...13.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del. quantity cm³/ : 163.0...165.0
1000 s: (160.0...168.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.00
Speed rpm : 1055...1065

STARTING FUEL DELIVERY

Speed rpm : 100

EOB

Del. quantity cm³/ : 230.0...250.0
1000 s: (226.0...254.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.80...5.10
Del. quantity cm³/ : 18.0...23.0
1000 s: (15.5...25.5)
Spread cm³ : 5.00
1000 s: (7.00)

Remarks:

:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 A 5
 Edition : 21.12.87
 Replaces : 14.8.87
 Test oil : ISO-4113

Combination no. : 0 402 648 825

Injection pump
 Pump designation : PE8P120A320LS7801
 EP type number : 0 412 628 806
 Governor
 Governor design. : RQV300..1050PA797-3
 Governor no. : 0 421 813 627

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM442 A

1st version kW : 260.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Rack travel in mm : 20.00...21.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 600

 Rack travel in mm : 13.90...14.00

 Del. quantity cm³/ : 19.6...19.8

 100 s: (19.3...20.1)

 Spread cm³ : 0.5

 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 6.2...6.6
 Del. quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.5)
 Spread cm³ : 0.6
 100 s: (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40
 2nd speed rpm : 600
 travel mm : 4.90...5.10
 3rd speed rpm : 1075
 travel mm : 7.40...7.60
 4th speed rpm : 1100
 travel mm : 8.00...8.20
 5th speed rpm : 1150
 travel mm : 9.00...9.20

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1090
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 600
Aneroid pressure h: 650
Del. quantity : 196.0...198.0
1000 : (193.0...201.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 49...57

Testing:

1st rack travel in: 11.80
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1155...1185
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Control lever
position degrees: 15...23

Testing:

Speed rpm : 100
Minimum rack travel: 7.70
Speed rpm : 300
Rack travel in mm : 6.20...6.40

CONSTANT REGULATION

Speed rpm : 300...450

TORQUE CONTROL

Dimension a mm : 1.40
2nd speed rpm : 1050
Rack travel in m: 12.60...12.80
3rd speed rpm : 850
Rack travel in m: 13.70...13.90
4th speed rpm : 700
Rack travel in m: 14.20...14.40

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Rack travel in mm : 650
Contr.-rod trav. mm: 13.80...14.00

Measurement

Speed 1/min : 600

1st pressure hPa : 300
Rack travel in m: 12.10...12.30

2nd pressure hPa : 400
Rack travel in m: 13.10...13.40
3rd pressure hPa : 850
Rack travel in m: 13.90...14.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1050
Speed rpm : 1050
Del. quantity cm³/ : 175.0...179.0
1000 s: (172.0...182.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1050
Speed rpm : 700
Del. quantity cm³/ : 209.0...213.0
1000 s: (206.0...216.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1050
Speed rpm : 850
Del. quantity cm³/ : 203.0...207.0
1000 s: (200.0...210.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 11.80
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 175.0...190.0
1000 s: (171.0...194.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : STE 6,5 L
Edition : 11.12.87
Replaces : -
Test oil : ISO-4113

Combination no. : 0 403 546 012

Injection pump
Pump designation : PE6MW100/72ORS1157
EP type number : 0 413 506 103
Governor
Governor design. : RQV250...1200MW93-2
Governor no. : 0 420 083 138

Customer-spec. information
Customer : STEYR

Engine : WD 612.93

1st version kW : 165.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.00...3.10
: (2.95...3.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 14.30...14.40

Del. quantity cm³/ : 13.1...13.3

100 s: (12.9...13.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.2...7.3

Del. quantity cm³/ : 1.2...1.6

100 s: (1.0...1.8)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1230

travel mm : 8.20...8.50

2nd speed rpm : 1340

travel mm : 10.00...10.40

3rd speed rpm : 250

travel mm : 0.70...1.10

4th speed rpm : 700

travel mm : 4.00...4.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1230

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Aneroid pressure h: 900

Del. quantity : 131.0...133.0

1000 : (129.0...135.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 41...49

Setting point:
Speed rpm : 1230
Rack travel in mm : 16.5

Testing:
1st rack travel in: 13.30
Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1310...1340
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 9...17
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 7.2

Testing:
Speed rpm : 100
Minimum rack trave: 8.80
Speed rpm : 250
Rack travel in mm : 7.20...7.30

CONSTANT REGULATION
Speed rpm : 260...460

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : -
Contr.-rod trav.mm: 11.90...12.00

Measurement
Speed 1/min : 500

1st pressure hPa : 430
Rack travel in m: 12.50...12.60
2nd pressure hPa : 580
Rack travel in m: 13.60...13.90
3rd pressure hPa : 900
Rack travel in m: 14.30...14.40

START CUT-OUT

Speed 1/min : 200 (220)

FUEL DELIVERY CHARACTERISTICS

1st version

E12

Aneroid pressure h: 900
Speed rpm : 700
Del.quantity cm3/ : 130.5...134.5
1000 s: (128.5...136.0)
Spread cm3 : 3.50
1000 s: (7.00)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 79.5...81.5
1000 s: (77.5...83.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 13.30
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 155.0...165.0
1000 s: (152.0...168.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 7.20...7.30
Del.quantity cm3/ : 12.0...16.0
1000 s: (10.0...18.0)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 13,4 D4
Edition : 02.11.87
Replaces : 20.08.87
Test oil : ISO-4113

Combination no. : 0 403 548 014

Injection pump
Pump designation : PE8MW100/72OLS1128
EP type number : 0 413 508 103
Governor
Governor design. : RQ300...1150MW63-2
Governor no. : 0 420 082 019

Customer-spec. information

Customer : KHD

Engine : BF 8L 513

1st version kW : 235.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 740 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 30...32

Prestroke mm : 3.10...3.20
: (3.05...3.25)

Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
4- 3

Phasing : 0-45-90-135-180-225-
270-315

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.80...12.90

Del. quantity cm³/ : 14.1...14.3
100 s : (13.9...14.5)

Spread cm³ : 0.3
100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.5...6.6

Del. quantity cm³/ : 1.3...1.7
100 s : (1.1...1.9)

Spread cm³ : 0.3
100 s : (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1280
travel mm : 9.00...9.80

2nd speed rpm : 1150
travel mm : 6.60...6.80

3rd speed rpm : 650
travel mm : 5.80...6.20

4th speed rpm : 300
travel mm : 1.20...2.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150
Aneroid pressure h : 900
Del. quantity : 141.0...143.0
1000 : (139.0...145.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 34...42

Setting point:
Speed rpm : 600
Rack travel in mm : 20.0

Testing:
1st rack travel in: 11.80
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1270...1300
4th rack travel in: 1370
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:
Speed rpm : 100
Minimum rack trave: 8.30
Speed rpm : 300
Rack travel in mm : 6.50...6.60

CONSTANT REGULATION
Speed rpm : 330...400

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.80...12.90
2nd speed rpm : 700
Rack travel in m: 13.80...13.90
3rd speed rpm : 950
Rack travel in m: 13.10...13.40

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 480
Contr.-rod trav.mm: 13.30...13.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.70...11.80
2nd pressure hPa : 330
Rack travel in m: 12.10...12.40
3rd pressure hPa : 900

E14

Rack travel in m: 13.80...13.90

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 700
Del.quantity cm3/ : 153.0...155.0
1000 s: (151.0...157.0)
Spread cm3 : 5.00
1000 s: (7.00)
Aneroid pressure h: -
Speed rpm : 450
Del.quantity cm3/ : 107.0...109.0
1000 s: (105.0...111.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.80
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (132.0...158.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.50...6.60
Del.quantity cm3/ : 13.0...17.0
1000 s: (11.0...19.0)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 B 2
Edition : 08.01.88
Replaces : 12.11.87
Test oil : ISO-4113

Combination no. : 9 400 083 452

Injection pump
Pump designation : PES6A100D320/3RS2691
-2
EP type number : 9 410 230 028
Governor
Governor design. : RQV350...1250AB1225R
Governor no. : 9 420 080 224

Customer-spec. information
Customer : CUMMINS

Engine : 6 C 8.3L

1st version kW : 123.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar : 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack tra, m: 9.00...12.00
& maximum rack tra: 21.00
Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.20...11.30

Del. quantity cm³/ : 10.3...10.5

100 s: (10.1...10.7)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0
Rack travel in mm : 5.4...5.6
Del. quantity cm³/ : 1.4...1.8
100 s: (1.1...2.0)
Spread cm³ : 0.3
100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
travel mm : 1.60...2.50
2nd speed rpm : 500
travel mm : 3.80...4.20
3rd speed rpm : 900
travel mm : 5.60...6.00
4th speed rpm : 1265
travel mm : 8.50...8.60

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1300
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250
Del. quantity : 103.5...105.5
1000 : (101.5...107.5)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 115...123

Testing:

1st rack travel in: 10.20
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1390...1420
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 67...75

Testing:

Speed rpm : 100
Minimum rack travel: 10.00
Speed rpm : 350
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.00
Speed rpm : 400...460

CONSTANT REGULATION

Speed rpm : 390...460

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.20...11.30
2nd speed rpm : 500
Rack travel in m: 11.80...11.90
3rd speed rpm : 600
Rack travel in m: 11.50...11.70
4th speed rpm : 750
Rack travel in m: 11.30...11.60

START CUT-OUT

Speed 1/min : 290 (310)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del. quantity cm³/ : 101.0...104.0
1000 s: (98.5...106.5)
Speed rpm : 600

Del. quantity cm³/ : 103.5...106.5
1000 s: (101.0...109.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.20
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 168.0...182.0
1000 s: (165.0...185.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.40...5.60
Del. quantity cm³/ : 14.0...18.0
1000 s: (11.5...20.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:
Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 3,9 D
Edition : 08.01.88
Replaces : 24.7.87
Test oil : ISO-4113

Combination no. : 9 400 085 272

Injection pump
Pump designation : PES4A90D32ORS2744
EP type number : 9 400 084 012
Governor
Governor design. : RSV350...1300A2B2215
-2R

Governer no. : 9 420 083 234

Customer-spec. information
Customer : MWM

Engine : TD 229-4

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 046

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80
: (2.65...2.85)

Rack travel in mm : 9.00...12.00
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
& maximum rack tra: 21.00
Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 10.60...10.70

Del. quantity cm³/ : 8.9...9.0

100 s: (8.7...9.2)

Spread cm³ : 0.3

100 s: (0.5)

2nd speed rpm : 350.0

Rack travel in mm : 4.9...5.1

Del. quantity cm³/ : 1.1...1.5

100 s: (0.9...1.7)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 5.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300

Del. quantity : 89.0...90.0

1000 : (87.0...92.0)

Spread cm³ : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 24...32

Testing:

1st rack travel in: 9.60
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1410...1440
4th rack travel in: 1600
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 55...63
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 4.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 350
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 540...600

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1300
Rack travel in m: 10.60...10.70
2nd speed rpm : 500
Rack travel in m: 11.20...11.30
3rd speed rpm : 800
Rack travel in m: 10.90...11.20
4th speed rpm : 900
Rack travel in m: 10.80...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del.quantity cm3/ : 87.0...89.0
1000 s: (84.5...91.5)
Speed rpm : 900
Del.quantity cm3/ : 89.0...91.0
1000 s: (86.5...93.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.60
Speed rpm : 1340...1350

INTERMEDIATE RATED SPEED

Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100

Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 4.90...5.10
Del.quantity cm3/ : 11.0...15.0
1000 s: (9.0...17.0)
Spread cm3 : 2.50
1000 s: (4.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 E
 Edition : 08.01.88
 Replaces : 24.7.87
 Test oil : ISO-4113

Combination no. : 9 400 085 288

Injection pump
 Pump designation : PES6A90D41ORS2596-1
 EP type number : 9 400 084 008
 Governor
 Governor design. : RQV300...1300AB1066-
 3L
 Governor no. : 9 420 080 230

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 366 A

1st version kW : 127.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 13.10...13.20

Del. quantity cm³/ : 8.6...8.7

100 s : (8.4...8.9)

Spread cm³ : 0.3

100 s : (0.5)

2nd speed rpm : 300.0

Rack travel in mm : 8.4...8.6

Del. quantity cm³/ : 1.0...1.4

100 s : (0.8...1.6)

Spread cm³ : 0.2

100 s : (0.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.90...1.30

2nd speed rpm : 500

travel mm : 2.20...2.60

3rd speed rpm : 800

travel mm : 4.30...4.70

4th speed rpm : 1100

travel mm : 6.60...6.40

5th speed rpm : 1375

travel mm : 8.40...8.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1375

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300

Aneroid pressure h : 1000

Del. quantity : 86.0...87.0

1000 : (84.0...89.0)

Spread cm³ : 3.00
1000 : (5.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 12.10
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1470...1500
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 74...82

Testing:

Speed rpm : 100
Minimum rack travel: 10.00
Speed rpm : 300
Rack travel in mm : 8.40...8.60
Rack travel in mm : 2.00
Speed rpm : 570...630

CONSTANT REGULATION

Speed rpm : 590...660

TORQUE CONTROL

Dimension a mm : 1.00
Torque control curve - 1st version
1st speed rpm : 1300
Rack travel in m: 13.10...13.20
2nd speed rpm : 800
Rack travel in m: 14.10...14.20
3rd speed rpm : 1000
Rack travel in m: 13.90...14.10
4th speed rpm : 1150
Rack travel in m: 13.30...13.60

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 14.10...14.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.80...12.90
2nd pressure hPa : 750

E20

Rack travel in m: 13.90...14.00
3rd pressure hPa : 650
Rack travel in m: 13.20...13.40

START CUT-OUT

Speed 1/min : 240 (260)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 800
Del.quantity cm³/ : 89.0...91.0
1000 s: (86.5...93.5)
Aneroid pressure h: 1000
Speed rpm : 1000
Del.quantity cm³/ : 90.0...92.0
1000 s: (87.5...94.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 66.5...68.5
1000 s: (64.5...70.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.10
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 71.0...81.0
1000 s: (68.0...84.0)
Rack travel in mm : 14.70...15.70

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 6,6 K
Edition : 08.01.88
Replaces : 12.11.87
Test oil : ISO-4113

Combination no. : 9 400 085 292

Injection pump
Pump designation : PES6A95D410RS2742
EP type number : 9 400 084 011
Governor
Governor design. : RQV350...1300AB1220-1L
Governor no. : 9 420 080 239

Customer-spec. information
Customer : FORD FNH

Engine : 6,6 L

1st version kW : 123.0
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.00

Test nozzle holder assembly : 1 688 901 017

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,6

Test lines : 1 680 750 015

Outside diameter x Wall thickness x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.15...3.25
 : (3.10...3.30)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
& maximum rack tra: 21.00
Difference ° CS : 2.00...3.00

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 12.80...12.90

Del. quantity cm³/ : 9.4...9.6

100 s: (9.1...9.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0
Rack travel in mm : 7.4...7.6
Del. quantity cm³/ : 2.2...2.6
100 s: (1.9...2.8)
Spread cm³ : 0.3
100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
travel mm : 1.10...1.80
2nd speed rpm : 500
travel mm : 2.70...3.10
3rd speed rpm : 700
travel mm : 3.50...3.90
4th speed rpm : 1000
travel mm : 4.90...5.30
5th speed rpm : 1450
travel mm : 8.50...8.60

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1540

Rack travel in mm : 8.00...0.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300
Aneroid pressure h: 600
Del. quantity : 94.0...96.0
1000 : (91.5...98.5)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 111...119

Testing:

1st rack travel in: 11.80
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1480...1510
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 68...76

Testing:

Speed rpm : 100
Minimum rack travel: 10.00
Speed rpm : 350
Rack travel in mm : 7.40...7.60
Rack travel in mm : 2.00
Speed rpm : 700...760

CONSTANT REGULATION

Speed rpm : 370...440

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 600
Contr.-rod trav. mm: 12.80...12.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.80...10.90
2nd pressure hPa : 300
Rack travel in m: 11.10...11.30
3rd pressure hPa : 400
Rack travel in m: 12.30...12.40

START CUT-OUT

Speed 1/min : 290 (310)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600
Speed rpm : 800
Del. quantity cm³/ : 83.5...87.5
1000 s: (81.5...89.5)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 58.5...60.5
1000 s: (56.0...63.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.80
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 180.0...200.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 7.40...7.60
Del. quantity cm³/ : 22.0...26.0
1000 s: (19.5...28.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 0 1
 Edition : 08.01.88
 Replaces : 24.7.87
 Test oil : ISO-4113

Combination no. : 9 400 087 256

Injection pump
 Pump designation : PE6P110A72ORS371
 EP type number : 0 411 816 123
 Governor
 Governor design. : RQ250/1100PA419R
 Governor no. : 9 420 080 138

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 355 A

1st version kW : 210.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 004

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

E23

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.70...11.80

Del. quantity cm³/ : 16.0...16.2

100 s: (15.7...16.5)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 1.1...1.6

100 s: (0.8...1.8)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP**1st version**

Speed rpm : 1100

Del. quantity : 160.0...162.0

1000 : (157.0...165.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED**1st version**

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 10.70

Speed rpm : 1145...1160

2nd rack travel in: 4.00

Speed rpm : 1210...1240

4th rack travel in: 1300

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 390...430

Speed rpm : 500

Maximum rack trave: 1.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500

Del. quantity cm3/ : 149.0...153.0

1000 s: (146.0...156.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70

Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm3/ : 144.0...160.0

1000 s: (-)

Rack travel in mm : 12.70...13.10

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0Q11
Edition : 08.01.88
Replaces :
Test oil : ISO-4113

Combination no. : 9 400 087 295

Injection pump
Pump designation : PE6P110A32ORS3108Y
EP type number : 0 411 816 729
Governor
Governor design. : RQV250...1100PA589-1
Governor no. : 9 420 080 166

Customer-spec. information
Customer : VOLVO

Engine : THD 100 EC

1st version kW : 180.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.10...11.20

Del. quantity cm³/ : 13.8...14.0

100 s: (13.5...14.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 5.0...5.2

Del. quantity cm³/ : 3.2...3.6

100 s: (2.9...3.8)

Spread cm³ : 0.3

100 s: (0.6)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.10...1.30

2nd speed rpm : 500

travel mm : 4.10...4.90

3rd speed rpm : 700

travel mm : 6.30...6.70

4th speed rpm : 950

travel mm : 6.30...6.70

5th speed rpm : 1100

travel mm : 7.00...7.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1175

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 900

Del. quantity : 138.0...140.0

1000 : (135.0...143.0)

Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 55...63

Testing:

1st rack travel in: 10.10
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1205...1235
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 250
Rack travel in mm : 5.00...5.20
Rack travel in mm : 2.00
Speed rpm : 345...405

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 11.10...11.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.60...9.80
2nd pressure hPa : 275
Rack travel in m: 9.90...10.00
3rd pressure hPa : 400
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm³/ : 105.5...108.5
1000 s: (103.0...111.0)

BREAKAWAY

E26

1st version
1mm rack travel less than

full load rack tr: 10.10
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.00...5.20
Del.quantity cm³/ : 32.0...36.0
1000 s: (29.5...38.5)
Spread cm³ : 3.00
1000 s: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CAT 10,5 J
 Edition : 08.01.88
 Replaces : 6.11.87
 Test oil : ISO-4113

Combination no. : 9 400 087 348

Injection pump
 Pump designation : PES6P100A72QLS508
 EP type number : 9 400 087 053
 Governor
 Governor design. : RGV350...875PA798-6
 Governor no. : 9 420 080 236

Customer-spec. information
 Customer : CATERPILLAR

Engine : 3306 DINA

1st version kW : 87.2
 Rated speed : 1750

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 9 401 087 348

Inlet press., bar : 2.00

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY
 Test pressure, bar: 2...3

Prestroke mm : 3.95...4.05
 : (3.90...4.10)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 875

 Rack travel in mm : 8.80...8.90

 Del. quantity cm³/ : 7.1...7.3

 100 s : (6.9...7.5)

 Spread cm³ : 0.3

 100 s : (0.6)

2nd speed rpm : 350.0
 Rack travel in mm : 6.7...6.9
 Del. quantity cm³/ : 1.0...1.4
 100 s : (0.7...1.6)
 Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 330
 travel mm : 0.90...1.70
 2nd speed rpm : 450
 travel mm : 3.20...3.60
 3rd speed rpm : 650
 travel mm : 5.10...5.50
 4th speed rpm : 950
 travel mm : 8.40...8.50

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 950
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 875
 Del. quantity : 71.5...73.5
 1000 : (69.5...75.5)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:

1st rack travel in: 7.80
Speed rpm : 910...920
2nd rack travel in: 4.00
Speed rpm : 950...980
4th rack travel in: 1050
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 11...19

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 350
Rack travel in mm : 5.10...5.30
Rack travel in mm : 2.00
Speed rpm : 420...480

CONSTANT REGULATION

Speed rpm : 350...420

TORQUE CONTROL

Dimension a mm : 0.70
Torque control curve - 1st version
1st speed rpm : 875
Rack travel in m: 8.80...8.90
2nd speed rpm : 600
Rack travel in m: 9.50...8.60
3rd speed rpm : 700
Rack travel in m: 9.20...9.40
4th speed rpm : 750
Rack travel in m: 9.00...9.30

START CUT-OUT

Speed 1/min : 290 (310)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del. quantity cm³/ : 70.0...74.0
1000 s: (68.0...76.0)
Spread cm³ : 5.00
1000 s: (7.00)
Speed rpm : 750
Del. quantity cm³/ : 70.5...74.5
1000 s: (68.5...76.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 7.80
Speed rpm : 910...920

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 165.0...185.0
1000 s: (161.0...189.0)
Rack travel in mm : 14.00...15.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.10...5.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CAT 10,5 I
 Edition : 08.01.88
 Replaces : 6.11.87
 Test oil : ISO-4113

Combination no. : 9 400 087 356

Injection pump
 Pump designation : PES6P100A72QLS511
 EP type number : 9 400 087 059
 Governor
 Governor design. : RQV350/840...900PA
 839
 Governor no. : 9 420 080 233

Customer-spec. information
 Customer : CATERPILLAR

Engine : 3306 DIT

1st version kW : 190.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 9 401 087 348

Inlet press., bar : 2.00

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 2...3

F01

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 12.60...12.70

Del. quantity cm³/ : 18.2...18.4

100 s: (18.0...18.7)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.3...1.7

100 s: (1.0...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 0.50...1.50

2nd speed rpm : 500
 travel mm : 2.40...2.60

3rd speed rpm : 750
 travel mm : 2.40...2.60

4th speed rpm : 850
 travel mm : 4.00...4.50

5th speed rpm : 950
 travel mm : 8.50...8.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 925

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 900

Del. quantity : 182.5...184.5
1000 : (180.0...187.0)
Spread cm³ : 3.50
1000 : (6.00)

APPLICATION
Generator

RATED SPEED

1st version
Control lever
position degrees: 57...65

Testing:
1st rack travel in: 11.60
Speed rpm : 910...920
2nd rack travel in: 4.00
Speed rpm : 930...960
4th rack travel in: 1050
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 5...13

Testing:
Speed rpm : 100
Minimum rack travel: 7.00
Speed rpm : 350
Rack travel in mm : 4.70...4.90
Rack travel in mm : 2.00
Speed rpm : 770...830

START CUT-OUT

Speed 1/min : 290 (310)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.60
Speed rpm : 910...920

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 195.0...215.0
1000 s: (191.0...219.0)
Rack travel in mm : 14.00...15.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 4.70...4.90

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CAT 10,5 G2
 Edition : 08.01.88
 Replaces : 12.11.87
 Test oil : ISO-4113

Combination no. : 9 400 087 363

Injection pump
 Pump designation : PES6P100A720LS502
 EP type number : 9 400 087 050
 Governor
 Governor design. : RQV350...1100PA828
 Governor no. : 9 420 080 232

Customer-spec. information
 Customer : CATERPILLAR

Engine : 3306 DITA

1st version kW : 173.7
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 9 401 087 348

Inlet press., bar : 2.00

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 2...3

Prestroke mm : 3.95...4.05
 : (3.90...4.10)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.40...12.50

Del. quantity cm³/ : 14.7...14.9

100 s : (14.4...15.1)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.3...1.7

100 s : (1.0...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 1.30...1.50

2nd speed rpm : 500
 travel mm : 2.90...3.20

3rd speed rpm : 700
 travel mm : 4.50...4.80

4th speed rpm : 900
 travel mm : 6.00...6.20

5th speed rpm : 1150
 travel mm : 8.50...8.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 500

Del. quantity : 147.0...149.0
1000 : (144.5...151.5)
Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 63...71

Testing:

1st rack travel in: 11.40
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 9...17

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 350
Rack travel in mm : 5.10...5.30
Rack travel in mm : 2.00
Speed rpm : 530...590

CONSTANT REGULATION

Speed rpm : 370...440

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 500
Contr.-rod trav.mm: 12.40...12.50

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.90...10.00
2nd pressure hPa : 300
Rack travel in m: 11.70...11.80
3rd pressure hPa : 200
Rack travel in m: 10.70...10.90

START CUT-OUT

Speed 1/min : 290 (310)

FUEL DELIVERY CHARACTERISTICS

FO4

1st version

Aneroid pressure h: 500
Speed rpm : 700
Del. quantity cm3/ : 149.0...153.0
1000 s: (147.0...155.0)
Spread cm3 : 5.00
1000 s: (7.00)
Aneroid pressure h: -
Speed rpm : 1100
Del. quantity cm3/ : 108.0...110.0
1000 s: (105.5...112.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.40
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 157.0...177.0
1000 s: (153.0...181.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.00...5.20

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 6,6 I
Edition : 08.01.88
Replaces : 12.11.87
Test oil : ISO-4113

Combination no. : 9 400 087 375

Injection pump
Pump designation : PES6P110A72ORS3194
EP type number : 9 400 087 055
Governor
Governor design. : RQV350...1300PA863-5
Governor no. : 9 420 080 240

Customer-spec. information
Customer : FORD FNH

Engine : 6,6 LTC

1st version kW : 126.0
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.05...4.15
 : (4.00...4.20)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
& maximum rack tra: 21.00
Difference ° CS : 2.00...3.00

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 14.60...14.70

Del. quantity cm³/ : 11.7...11.9

100 s: (11.5...12.1)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 8.6...8.8

Del. quantity cm³/ : 2.0...2.4

100 s: (1.7...2.6)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.90...1.30

2nd speed rpm : 500

travel mm : 2.60...3.00

3rd speed rpm : 800

travel mm : 4.30...4.70

4th speed rpm : 1000

travel mm : 5.20...5.60

5th speed rpm : 1450

travel mm : 8.50...8.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1540

Rack travel in mm : 8.00...0.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300
Aneroid pressure h: 800
Del. quantity : 117.0...119.0
1000 : (115.0...121.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 44...52

Testing:

1st rack travel in: 13.60
Speed rpm : 1360...1370
2nd rack travel in: 4.00
Speed rpm : 1520...1550
4th rack travel in: 1650
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 13...21

Testing:

Speed rpm : 100
Minimum rack travel: 12.00
Speed rpm : 350
Rack travel in mm : 8.60...8.80
Rack travel in mm : 2.00
Speed rpm : 535...595

CONSTANT REGULATION

Speed rpm : 430...500

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 800
Contr.-rod trav. mm: 14.60...14.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.60...12.70
2nd pressure hPa : 580
Rack travel in m: 13.40...13.60
3rd pressure hPa : 620
Rack travel in m: 14.00...14.10

START CUT-OUT

Speed 1/min : 290 (310)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 800
Speed rpm : 900
Del. quantity cm3/ : 100.5...104.5
1000 s: (98.5...106.5)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm3/ : 57.0...59.0
1000 s: (55.0...61.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 13.60
Speed rpm : 1360...1370

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 120.0...140.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 8.60...8.80
Del. quantity cm3/ : 20.0...24.0
1000 s: (17.5...26.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 7,8 C 1
Edition : 08.01.88
Replaces : 12.11.87
Test oil : ISO-4113

Combination no. : 9 400 087 377

Injection pump
Pump designation : PES6P110A720RS3193
EP type number : 9 400 087 057
Governor
Governor design. : RSV650...1250P8A530-1
Governor no. : 9 420 082 324

Customer-spec. information
Customer : FORD - FNH

Engine : 7.8 l

1st version kW : 165.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.25...4.35
 : (4.20...4.40)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
& maximum rack tra: 21.00
Difference ° CS : 2.00...3.00

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 14.00...14.10

Del. quantity cm³/ : 13.7...13.9

100 s: (13.5...14.1)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 650.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 1.1...1.5

100 s: (0.8...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 3.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Aneroid pressure h: 1000

Del. quantity : 137.0...139.0

1000 : (135.0...141.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 49...57

Testing:
1st rack travel in: 13.00
Speed rpm : 1260...1270
2nd rack travel in: 4.00
Speed rpm : 1305...1325
4th rack travel in: 1400
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 23...31
Setting point w/out bumper spring
Speed rpm : 650
Rack travel in mm : 5.5

Testing:
Speed rpm : 600
Minimum rack travel: 10.00
Speed rpm : 650
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 770...830

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 14.00...14.10

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.40...10.50
2nd pressure hPa : 600
Rack travel in m: 13.40...13.50
3rd pressure hPa : 350
Rack travel in m: 11.60...11.80

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 800
Del.quantity cm3/ : 117.5...119.5
1000 s: (115.5...121.5)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm3/ : 52.0...54.0
1000 s: (50.0...56.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 13.00
Speed rpm : 1260...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (131.0...159.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 650
Rack travel in mm : 5.90...6.10
Del.quantity cm3/ : 11.0...15.0
1000 s: (8.5...17.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 7,8 D
 Edition : 08.01.88
 Replaces : 12.11.87
 Test oil : ISO-4113

Combination no. : 9 400 087 379

Injection pump
 Pump designation : PES6P110A72ORS3150
 EP type number : 9 400 087 046
 Governor
 Governor design. : RQV350...1200PA863
 Governor no. : 9 420 080 242

Customer-spec. information
 Customer : FORD (FNH)

Engine : 7.8 L TC

1st version kW : 138.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.25...4.35
 : (4.20...4.40)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
 & maximum rack tra: 21.00
 Difference ° CS : 2.00...3.00

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 13.00...13.10

Del. quantity cm³/ : 12.7...12.9

100 s: (12.5...13.1)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 8.0...8.2

Del. quantity cm³/ : 2.3...2.7

100 s: (2.0...2.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.90...1.30

2nd speed rpm : 500

travel mm : 2.60...3.00

3rd speed rpm : 800

travel mm : 4.40...4.80

4th speed rpm : 1000

travel mm : 5.50...5.90

5th speed rpm : 1360

travel mm : 8.40...8.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1440

Rack travel in mm : 8.00...0.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200
Aneroid pressure h: 600
Del. quantity : 127.5...129.5
1000 : (125.5...131.5)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 42...50

Testing:

1st rack travel in: 12.00
Speed rpm : 1260...1270
2nd rack travel in: 4.00
Speed rpm : 1385...1415
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 13...21

Testing:

Speed rpm : 100
Minimum rack trave: 12.00
Speed rpm : 350
Rack travel in mm : 8.00...8.20
Rack travel in mm : 2.00
Speed rpm : 495...555

CONSTANT REGULATION

Speed rpm : 390...460

TORQUE CONTROL

Dimension a mm : 0.80
Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 13.00...13.10
2nd speed rpm : 750
Rack travel in m: 13.80...13.90
4th speed rpm : 975
Rack travel in m: 13.40...13.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 600
Contr.-rod trav. mm: 13.80...13.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.20...12.30
2nd pressure hPa : 267
Rack travel in m: 12.60...12.70
3rd pressure hPa : 335
Rack travel in m: 13.30...13.50

START CUT-OUT

Speed 1/min : 290 (310)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600
Speed rpm : 750
Del. quantity cm3/ : 115.0...119.0
1000 s: (113.0...121.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm3/ : 74.5...76.5
1000 s: (72.5...78.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 12.00
Speed rpm : 1260...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 140.0...160.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 8.00...8.20
Del. quantity cm3/ : 23.0...27.0
1000 s: (20.5...29.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 7,8 E
Edition : 08.01.88
Replaces : 12.11.87
Test oil : ISO-4113

Combination no. : 9 400 087 380

Injection pump
Pump designation : PES6P110A72ORS3151
EP type number : 9 400 087 047
Governor
Governor design. : RQV350...1200PA863-1
Governor no. : 9 420 080 243

Customer-spec. information
Customer : FORD (FNH)

Engine : 7.8 L TC

1st version kW : 157.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.25...4.35
 : (4.20...4.40)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
& maximum rack tra: 21.00
Difference ° CS : 2.00...3.00

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 13.30...13.40

Del. quantity cm³/ : 13.2...13.4

100 s: (13.0...13.6)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 8.0...8.2

Del. quantity cm³/ : 2.6...3.0

100 s: (2.3...3.2)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.90...1.30

2nd speed rpm : 500

travel mm : 2.60...3.00

3rd speed rpm : 800

travel mm : 4.40...4.80

4th speed rpm : 1000

travel mm : 5.50...5.90

5th speed rpm : 1360

travel mm : 8.40...8.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1440

Rack travel in mm : 8.00...0.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200
Aneroid pressure h: 600
Del. quantity : 132.0...134.0
1000 : (130.0...136.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 43...51

Testing:

1st rack travel in: 12.30
Speed rpm : 1260...1270
2nd rack travel in: 4.00
Speed rpm : 1390...1420
4th rack travel in: 1520
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 13...21

Testing:

Speed rpm : 100
Minimum rack trave: 12.00
Speed rpm : 350
Rack travel in mm : 8.00...8.20
Rack travel in mm : 2.00
Speed rpm : 495...555

CONSTANT REGULATION

Speed rpm : 390...460

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1200
Rack travel in m: 12.30...12.40
2nd speed rpm : 750
Rack travel in m: 14.00...14.10
4th speed rpm : 975
Rack travel in m: 13.80...13.90

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 600
Contr.-rod trav.mm: 14.00...14.10

Measurement

F13

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.90...12.00
2nd pressure hPa : 420
Rack travel in m: 12.50...12.60
3rd pressure hPa : 505
Rack travel in m: 13.40...13.60

START CUT-OUT

Speed 1/min : 290 (310)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600
Speed rpm : 750
Del. quantity cm³/ : 116.0...120.0
1000 s: (114.0...122.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 70.0...72.0
1000 s: (68.0...74.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 12.30
Speed rpm : 1260...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 150.0...170.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 8.00...8.20
Del. quantity cm³/ : 26.0...30.0
1000 s: (23.5...32.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Set shutoff stop 1.5...2.0 mm before shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 7,8 D 1
Edition : 08.01.88
Replaces : 12.11.87
Test oil : ISO-4113

Combination no. : 9 400 087 381

Injection pump
Pump designation : PES6P110A720RS3150
EP type number : 9 400 087 046
Governor
Governor design. : RQV350...120CPA863-3
Governor no. : 9 420 080 244

Customer-spec. information
Customer : FORD (FNH)

Engine : 7.8 L TC

1st version kW : 160.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 4.25...4.35
: (4.20...4.40)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
& maximum rack tra: 21.00
Difference ° CS : 2.00...3.00

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 12.90...13.00

Del. quantity cm³/ : 12.5...12.7

100 s: (12.3...12.9)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 8.0...8.2

Del. quantity cm³/ : 2.3...2.7

100 s: (2.1...2.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.90...1.30

2nd speed rpm : 500

travel mm : 2.60...3.00

3rd speed rpm : 800

travel mm : 4.40...54.8

4th speed rpm : 1000

travel mm : 5.50...5.90

5th speed rpm : 1360

travel mm : 8.40...8.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1440

Rack travel in mm : 8.00...0.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200
Aneroid pressure h: 600
Del. quantity : 125.5...127.5
1000 : (123.5...129.5)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 42...50

Testing:

1st rack travel in: 11.90
Speed rpm : 1260...1270
2nd rack travel in: 4.00
Speed rpm : 1380...1410
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 13...21

Testing:

Speed rpm : 100
Minimum rack trave: 12.00
Speed rpm : 350
Rack travel in mm : 8.00...8.20
Rack travel in mm : 2.00
Speed rpm : 495...555

CONSTANT REGULATION

Speed rpm : 390...460

TORQUE CONTROL

Dimension a mm : 1.10
Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 12.90...13.00
2nd speed rpm : 750
Rack travel in m: 14.00...14.10
4th speed rpm : 975
Rack travel in m: 13.50...13.60

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 600
Contr.-rod trav. mm: 14.00...14.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.90...13.00
2nd pressure hPa : 333
Rack travel in m: 13.20...13.30
3rd pressure hPa : 380
Rack travel in m: 13.70...13.90

START CUT-OUT

Speed 1/min : 290 (310)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600
Speed rpm : 750
Del. quantity cm3/ : 117.0...121.0
1000 s: (115.0...123.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm3/ : 84.0...86.0
1000 s: (82.0...88.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 1260...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 150.0...170.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 8.00...8.20
Del. quantity cm3/ : 23.0...27.0
1000 s: (21.0...29.0)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 7,8 E 1
Edition : 08.01.88
Replaces : 12.11.87
Test oil : ISO-4113
Combination no. : 9 400 087 382
Injection pump
Pump designation : PES6P110A72ORS3151
EP type number : 9 400 087 047
Governor
Governor design. : RQV350...1200PA863-2
Governor no. : 9 420 080 245

Customer-spec. information
Customer : FORD (FNH)

Engine : 7.8 L TC

1st version kW : 160.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY
Test pressure, bar : 25...27

Prestroke mm : 4.25...4.35
 : (4.20...4.40)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
& maximum rack tra: 21.00
Difference ° CS : 2.00...3.00

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 13.70...13.80

Del. quantity cm³/ : 13.6...13.8

100 s: (13.4...14.0)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 8.0...8.2

Del. quantity cm³/ : 2.4...2.8

100 s: (2.1...3.0)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.90...1.30

2nd speed rpm : 500

travel mm : 2.60...3.00

3rd speed rpm : 800

travel mm : 4.40...4.80

4th speed rpm : 1000

travel mm : 5.50...5.90

5th speed rpm : 1360

travel mm : 8.40...8.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1440

Rack travel in mm : 8.00...0.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200
Aneroid pressure h: 600
Del.quantity : 136.0...138.0
1000 : (134.0...140.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 43...51

Testing:

1st rack travel in: 12.70
Speed rpm : 1260...1270
2nd rack travel in: 4.00
Speed rpm : 1400...1430
4th rack travel in: 1530
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 13...21

Testing:

Speed rpm : 100
Minimum rack trave: 12.00
Speed rpm : 350
Rack travel in mm : 8.00...8.20
Rack travel in mm : 2.00
Speed rpm : 495...555

CONSTANT REGULATION

Speed rpm : 390...460

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 13.70...13.80
2nd speed rpm : 750
Rack travel in m: 14.30...14.40
4th speed rpm : 975
Rack travel in m: 14.10...14.20

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 600
Contr.-rod trav.mm: 14.30...14.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.40...12.50
2nd pressure hPa : 345
Rack travel in m: 12.90...13.00
3rd pressure hPa : 420
Rack travel in m: 13.60...13.80

START CUT-OUT

Speed 1/min : 290 (310)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600
Speed rpm : 750
Del.quantity cm3/ : 119.0...123.0
1000 s: (117.0...125.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 76.5...78.5
1000 s: (74.5...80.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 12.70
Speed rpm : 1260...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (-)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 8.00...8.20
Del.quantity cm3/ : 24.0...28.0
1000 s: (21.5...30.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:
Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 7,8 E 2
 Edition : 08.01.88
 Replaces : 12.11.87
 Test oil : ISO-4113

Combination no. : 9 400 087 383

Injection pump
 Pump designation : PES6P110A720RS3151
 EP type number : 9 400 087 047
 Governor
 Governor design. : RQV350...1200PA863-4
 Governor no. : 9 420 080 246

Customer-spec. information
 Customer : FORD (FNH)

Engine : 7.8 L TC

1st version kW : 179.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.25...4.35
 : (4.20...4.40)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
 & maximum rack tra: 21.00
 Difference ° CS : 2.00...3.00

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 14.50...14.60

Del. quantity cm³/ : 14.9...15.1

100 s: (14.7...15.3)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 8.0...8.2

Del. quantity cm³/ : 2.4...2.8

100 s: (2.1...3.0)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.90...1.30

2nd speed rpm : 500

travel mm : 2.60...3.00

3rd speed rpm : 800

travel mm : 4.40...4.80

4th speed rpm : 1000

travel mm : 5.50...5.90

5th speed rpm : 1360

travel mm : 8.40...8.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1440

Rack travel in mm : 8.00...0.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200
Aneroid pressure h : 700
Del. quantity : 149.5...151.5
1000 : (147.5...153.5)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 44...52

Testing:

1st rack travel in: 13.50
Speed rpm : 1260...1270
2nd rack travel in: 4.00
Speed rpm : 1410...1440
4th rack travel in: 1520
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 13...21

Testing:

Speed rpm : 100
Minimum rack trave: 12.00
Speed rpm : 350
Rack travel in mm : 8.00...8.20
Rack travel in mm : 2.00
Speed rpm : 495...555

CONSTANT REGULATION

Speed rpm : 390...460

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 14.50...14.60
2nd speed rpm : 750
Rack travel in m: 15.00...15.10
4th speed rpm : 975
Rack travel in m: 14.70...14.80

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 15.00...15.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.10...12.20
2nd pressure hPa : 430
Rack travel in m: 13.30...13.40
3rd pressure hPa : 532
Rack travel in m: 14.30...14.50

START CUT-OUT

Speed 1/min : 290 (310)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 750
Del. quantity cm³/ : 128.0...132.0
1000 s: (126.0...134.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 72.0...74.0
1000 s: (70.0...76.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 13.50
Speed rpm : 1260...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...160.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 8.00...8.20
Del. quantity cm³/ : 24.0...28.0
1000 s: (21.5...30.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 C 4
Edition : 14.01.88
Replaces : 6.11.87
Test oil : ISO-4113

Combination no. : 9 400 230 045

Injection pump
Pump designation : PES6A95D410RS2522-1
EP type number : 9 410 230 017
Governor
Governor design. : RSV425...1100A2C2161
L
Governor no. : 9 420 234 140

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466T

1st version kW : 106.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 27...29

Prestroke mm : 1.85...1.95
: (1.80...2.00)

Rack travel in mm : 10.50...10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.00...9.10

Del. quantity cm³/ : 8.6...8.8

100 s : (8.4...9.0)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 425.0
Rack travel in mm : 5.5...5.7
Del. quantity cm³/ : 1.8...2.2
100 s : (1.5...2.4)
Spread cm³ : 0.3
100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Aneroid pressure h : 500
Del. quantity : 86.5...88.5
1000 : (84.0...90.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 46...54

Testing:
1st rack travel in: 8.00
Speed rpm : 1145...1155

2nd rack travel in: 4.00
Speed rpm : 1185...1195
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 21...29
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 5.1

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 425
Rack travel in mm : 5.50...5.70
Rack travel in mm : 2.00
Speed rpm : 590...650

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 10.40...10.60

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : -
Contr.-rod trav.mm: 10.20...10.40

Measurement

Speed 1/min : 500
1st pressure hPa : 100
Rack travel in m: 10.30...10.40
2nd pressure hPa : 149
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 500
Speed rpm : 650
Del.quantity cm³/ : 102.5...105.5
1000 s: (100.0...108.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : -
1000 s: (87.0...95.0)

BREAKAWAY

F25

1st version
1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 155.0...175.0
1000 s: (150.0...180.0)
Rack travel in mm : 19.00...21.00

HIGH IDLE

1st version
Speed rpm : 1180
Rack travel in mm : 5.30...5.50

LOW IDLE

Speed rpm : 425
Rack travel in mm : 5.50...5.70
Del.quantity cm³/ : 18.0...22.0
1000 s: (15.5...24.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

: JOHN-DEERE - RE23750

Setting without torque-control spring
retainer with 1 mm control-rod travel
less. Raising of full-load delivery
with torque-control spring retainer to
9,0 mm control-rod travel.

Start-of-delivery mark 16^o cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 J 1
Edition : 14.01.88
Replaces : 6.11.87
Test oil : ISO-4113

Combination no. : 9 400 230 046

Injection pump
Pump designation : PES6A95D410RS2561
EP type number : 9 410 230 006
Governor
Governor design. : RSV600...1100A2C2048
-1L
Governor no. : 9 420 234 157

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466T

1st version kW : 110.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 413 385 007

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.35X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 1.85...1.95
: (1.80...2.00)

Rack travel in mm : 10.50...10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.90...10.00

Del. quantity cm³/ : 9.1...9.3

100 s : (8.9...9.5)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 600.0
Rack travel in mm : 5.0...5.2
Del. quantity cm³/ : 1.2...1.6
100 s : (0.9...1.8)
Spread cm³ : 0.3
100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Aneroid pressure h: -
Del. quantity : 91.0...93.0
1000 : (89.0...95.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 44...52

Testing:
1st rack travel in: 8.90
Speed rpm : 1145...1155

2nd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 600
Rack travel in mm : 4.6

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 600
Rack travel in mm : 5.00...5.20
Rack travel in mm : 2.00
Speed rpm : 710...770

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.90...10.00
2nd speed rpm : 950
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 950
Del. quantity cm³/ : 104.0...108.0
1000 s: (101.5...110.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.90
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 155.0...175.0
1000 s: (150.0...180.0)
Rack travel in mm : 19.00...21.00

HIGH IDLE

1st version

Speed rpm : 1200
Rack travel in mm : 4.70...4.90

LOW IDLE

Speed rpm : 600
Rack travel in mm : 5.00...5.20
Del. quantity cm³/ : 12.0...16.0
1000 s: (9.5...18.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

: JOHN DEERE - RE10472

Adjustment without torque-control
spring retainer with 1 mm less
Start-of-delivery mark = 15.5° after
start of delivery cyl. 1. rque-control
pring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 A 8
 Edition : 14.01.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 400 230 116
 Injection pump
 Pump designation : PES6A1000320/3RS2691
 EP type number : 9 410 230 025
 Governor
 Governor design. : RSV400...1050AOC2190
 -25R
 Governor no. : 9 420 234 182

Customer-spec. information
 Customer : C.D.C

Engine : 6 CT 8.3
 1st version kW : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 047
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 017
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,6
 Test lines : 9 681 271 029
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY
 Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 10.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

 Rack travel in mm : 12.40...12.50

 Del. quantity cm³/ : 12.2...12.4

 100 s: (12.0...12.6)

 Spread cm³ : 0.3

 100 s: (0.6)

2nd speed rpm : 400.0
 Rack travel in mm : 5.8...6.0
 Del. quantity cm³/ : 1.6...2.0
 100 s: (1.3...2.2)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1050
 Del. quantity : 122.5...124.5
 1000 : (120.5...126.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 38...46

Testing:
 1st rack travel in: 11.40
 Speed rpm : 1090...1100
 2nd rack travel in: 4.00
 Speed rpm : 1135...1165

3rd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1200
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 19...27
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 440...500

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.40
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 135.0...0.0
1000 s: (130.0...0.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del. quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

: C.D.C. - 391 1955

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 C 6
Edition : 14.01.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 400 230 117

Injection pump
Pump designation : PES6A95D41ORS2522-2
EP type number : 9 410 230 032
Governor
Governor design. : RSV425...1100A2C2161
-3L
Governor no. : 9 420 234 183

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466TR20

1st version kW : 110,0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 125...145

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 1.85...1.95
: (1.80...2.00)
Rack travel in mm : 10.50...10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 8.80...8.90

Del. quantity cm³/ : 8.7...8.9

100 s: (8.5...9.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 4.8...5.0

Del. quantity cm³/ : 1.1...1.5

100 s: (0.8...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 600

Del. quantity : 87.5...89.5

1000 : (85.5...91.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 46...54

Testing:

1st rack travel in: 7.80
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1190...1200
4th rack travel in: 1300
Speed rpm : 0.30...1.30

LOW IDLE 1

Control lever
position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 4.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 425
Rack travel in mm : 4.80...5.00
Rack travel in mm : 2.00
Speed rpm : 590...650

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 8.80...8.90
2nd speed rpm : 700
Rack travel in m: 10.00...10.20

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 240
Contr.-rod trav.mm: 9.60...9.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.00...9.20
2nd pressure hPa : 200
Rack travel in m: 9.10...9.50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600
Speed rpm : 700
Del.quantity cm³/ : 98.5...101.5
1000 s: (96.0...104.0)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm³/ : -
1000 s: (72.0...80.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 7.80
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 160.0...180.0
1000 s: (155.0...185.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 425
Rack travel in mm : 4.80...5.00
Del.quantity cm³/ : 11.0...15.0
1000 s: (8.5...17.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

: JOHN DEERE - RE32013

Adjustment without torque-control
spring retainer with 1 mm less
Starting/full-load transition speed
from holding magnet = 450 1/min. ntrol
pring retainer.
Start-of-delivery mark 16° cam angle
after start of delivery cyl. 1

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 C 7
Edition : 14.01.88
Replaces : -
Test oil : ISO-4113

Combination no. : 9 400 230 118

Injection pump
Pump designation : PES6A95D41ORS2522-2
EP type number : 9 410 230 032
Governor
Governor design. : RSV425...1100A2C2161
-4L
Governor no. : 9 42U 234 184

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466TRW-06

1st version kW : 98.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 135...155

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 27...29

Prestroke mm : 1.85...1.95
: (1.80...2.00)

Rack travel in mm : 10.50...10.50

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 8.20...8.30

Del. quantity cm³/ : 7.9...8.1

100 s : (7.7...8.3)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 425.0
Rack travel in mm : 4.8...5.0
Del. quantity cm³/ : 1.1...1.5
100 s : (0.8...1.7)
Spread cm³ : 0.3
100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Aneroid pressure h: 600
Del. quantity : 79.0...81.0
1000 : (77.0...83.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 49...57

Testing:

1st rack travel in: 7.20
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1190...1200
4th rack travel in: 1300
Speed rpm : 0.30...1.30

LOW IDLE 1

Control lever
position degrees: 27...35
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 4.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 425
Rack travel in mm : 4.80...5.00
Rack travel in mm : 2.00
Speed rpm : 590...650

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 8.20...8.30
2nd speed rpm : 700
Rack travel in m: 9.40...9.60

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 213
Contr.-rod trav.mm: 9.20...9.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.90...9.10
2nd pressure hPa : 193
Rack travel in m: 8.80...9.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600
Speed rpm : 700
Del.quantity cm³/ : 86.0...89.0
1000 s: (83.5...91.5)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm³/ : -
1000 s: (69.5...77.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 7.20
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 160.0...180.0
1000 s: (155.0...185.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 425
Rack travel in mm : 4.80...5.00
Del.quantity cm³/ : 11.0...15.0
1000 s: (8.5...17.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

: JOHN DEERE - RE31629

Adjustment without torque-control
spring retainer with 1 mm less
Starting/full-load transition speed
from holding magnet = 450 1/min. nrol
pring retainer.
Start-of-delivery mark 16° cam angle
after start of delivery cyl. 1

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 B 4
 Edition : 14.01.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 9 400 230 119
 Injection pump
 Pump designation : PES6A100D320/3RS2691
 -2
 EP type number : 9 410 230 028
 Governor
 Governor design. : RQV350...1250AB1235R
 Governor no. : 9 420 231 020

Customer-spec. information
 Customer : C.D.C.

Engine : 6 CT-830
 1st version kW : 157.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 047
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 017
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter : 0,6
 Test lines : 9 681 271 029
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

G06

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 10.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

 Rack travel in mm : 11.40...11.50

 Del. quantity cm³/ : 11.4...11.6

 100 s: (11.2...11.8)

 Spread cm³ : 0.3

 100 s: (0,6)

2nd speed rpm : 350.0
 Rack travel in mm : 5.1...5.3
 Del. quantity cm³/ : 1.6...2.0
 100 s: (1.3...2.2)
 Spread cm³ : 0.3
 100 s: (0,5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1400
 travel mm : 8.50...8.50
 2nd speed rpm : 1500
 travel mm : 9.30...9.50
 3rd speed rpm : 350
 travel mm : 0.80...0.80
 4th speed rpm : 450
 travel mm : 1.80...2.30
 5th speed rpm : 250
 travel mm : 0.10...0.50

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1550
 Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250

Aneroid pressure h: 500
Del. quantity : 114.5...116.5
1000 : (112.5...118.5)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 42...48

Testing:

1st rack travel in: 10.40
Speed rpm : 1300...1310
2nd rack travel in: 4.00
Speed rpm : 1425...1455
4th rack travel in: 1525
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 9...15

Testing:

Speed rpm : 250
Minimum rack travel: 7.80
Speed rpm : 350
Rack travel in mm : 5.10...5.30

CONSTANT REGULATION

Speed rpm : 350...500

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.40...11.50
2nd speed rpm : 750
Rack travel in m: 11.90...12.00
3rd speed rpm : 1200
Rack travel in m: 11.40...11.50
4th speed rpm : 900
Rack travel in m: 11.90...12.00

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : -
Contr.-rod trav. mm: 8.90...9.10

Measurement

Speed 1/min : 500

1st pressure hPa : 186
Rack travel in m: 9.70...9.80

2nd pressure hPa : 346
Rack travel in m: 10.90...11.30
3rd pressure hPa : 500
Rack travel in m: 11.90...12.00

START CUT-OUT

Speed 1/min : 270 (280)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 500
Speed rpm : 750
Del. quantity cm³/ : 118.0...122.0
1000 s: (116.0...124.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : -
1000 s: (59.5...67.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 10.40
Speed rpm : 1300...1310

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 160.0...180.0
1000 s: (155.0...185.0)
Rack travel in mm : 14.60...14.80

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.10...5.30
Del. quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

: C.D.C. - 3912636

Start-of delivery mark/lock = 7.5°
angular displacement of the cam after
start of delivery of cylinder 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 A 3
Edition : 15.01.88
Replaces : 10.85
Test oil : ISO-4113

Combination no. : 9 400 231 076

Injection pump
Pump designation : PES6P110A72ORS361
EP type number : 0 412 016 050
Governor
Governor design. : RSV600...1150P2/480
Governor no. : 9 420 234 050

Customer-spec. information
Customer : JOHN-DEERE

Engine : 6466 A

1st version kW : 170.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.75...2.85
: (2.70...2.90)

Rack travel in mm : 9.00...12.00

G08

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 16.2...16.4

100 s: (15.9...16.7)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 600.0

Rack travel in mm : 5.4...5.6

Del. quantity cm³/ : 2.2...2.8

100 s: (1.9...3.1)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 162.5...164.5

1000 : (159.5...167.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 42...50

Testing:

1st rack travel in: 11.00

Speed rpm : 1145...1155

2nd rack travel in: 4.00

Speed rpm : 1220...1250

4th rack travel in: 1380

Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 21...29
Setting point w/out bumper spring
Speed rpm : 600
Rack travel in mm : 5.0
Speed rpm : 600
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.00
Speed rpm : 730...790

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.95...12.05
2nd speed rpm : 950
Rack travel in m: 12.00...12.40
3rd speed rpm : 850
Rack travel in m: 12.25...12.35

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 850
Del.quantity cm³/ : 170.0...176.0
1000 s: (168.0...178.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.00
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 160.0...180.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

HIGH IDLE

1st version
Speed rpm : 1200
Del.quantity cm³/ : 55.0...65.0
1000 s: (53.0...67.0)
Spread cm³ : 8.00
1000 s: (12.0)

LOW IDLE

Speed rpm : 600
Rack travel in mm : 5.40...5.60

Del.quantity cm³/ : 22.0...28.0
1000 s: (19.0...31.0)
Spread cm³ : 4.50
1000 s: (7.50)

Remarks:

:

Adjustment without torque-control
spring retainer with 1 mm less
Start-of-delivery mark = 13.25° after
start of delivery cyl. 1. rque-control
pring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 G 8
Edition : 14.01.88
Replaces : -
Test oil : ISO-4113
Combination no. : 9 400 231 236
Injection pump
Pump designation : PES6P110A72ORS3083-1
EP type number : 9 410 231 027
Governor
Governor design. : RSV475...1050P2A455-3
Governor no. : 9 420 234 172
Customer-spec. information
Customer : JOHN DEERE
Engine : 6466A
1st version kW : 151.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 457 413 010
Inlet press., bar : 1.50
Test nozzle holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
Test lines : 9 681 271 022
Outside diameter
x Wall thickness
x Length mm : 6.35X3.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 27...29
Prestroke mm : 3.45...3.55
: (3.40...3.60)

Rack travel in mm : 10.50...10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 11.70...11.80

Del. quantity cm³/ : 13.6...13.9

100 s: (13.4...14.2)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 475.0
Rack travel in mm : 5.9...6.1
Del. quantity cm³/ : 1.4...1.9
100 s: (1.2...2.2)
Spread cm³ : 0.4
100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1050
Del. quantity : 136.5...139.5
1000 : (134.0...142.0)
Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 38...46

Testing:
1st rack travel in: 10.70
Speed rpm : 1090...1100
2nd rack travel in: 4.00

Speed rpm : 1145...1155
3rd rack travel in: 4.00
Speed rpm : 1150...1170
4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 475
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 475
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 650...710

TORQUE CONTROL

Dimension a mm : 0.40
Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 11.70...11.80
2nd speed rpm : 700
Rack travel in m: 12.10...12.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del. quantity cm³/ : 139.5...143.5
1000 s: (136.5...146.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 150.0...170.0
1000 s: (145.0...175.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 475
Rack travel in mm : 5.90...6.10
Del. quantity cm³/ : 14.5...19.5
1000 s: (12.0...22.0)

Spread cm³ : 4.50
1000 s: (7.50)

Remarks: : JOHN DEERE - RE30252

Adjustment without torque-control
spring retainer with 1 mm less
Start-of-delivery mark 12° cam angle
after start of delivery cyl. 1. onrol
pring retainer.

APPLICATION
Excavator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 2,0 N
Edition : 15.1.88
Replaces : 12.85
Test oil : ISO-4113

Combination no. : 0 400 074 936

Injection pump
Pump designation : PES4M55C320RS152-3
EP type number : 0 410 054 967
Governor
Governor design. : RSF375/2300M55-4
Governor no. : 0 420 021 046

Customer-spec. information
Customer : DB

Engine : OM 601 (2,0 L)

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.00...2.10
: (1.95...2.15)
Rack travel in mm : 20.00...22.00
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance + - ° : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.10...11.20

Del. quantity cm³/ : 3.1...3.2

100 s: (3.0...3.3)

Spread cm³ : 0.25

100 s: (0.30)

2nd speed rpm : 375
Rack travel in mm : 5.4...5.6
Del. quantity cm³/ : 0.5...0.6
100 s: (0.45...0.90)
Spread cm³ : 0.10
100 s: (0.15)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del. quantity : 31.0...32.0
1000 : (30.0...33.0)
Spread cm³ : 2.50
1000 : (3.00)

RATED SPEED

1st version
Control lever
position degrees: 50...0
3rd rack travel in: 7.8...8.2
Speed rpm : 0...2500
4th rack travel in: 2950
Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER POSITION

Speed rpm : 1000
Rack travel in mm : 0.90...1.00

LOW IDLE 1

Control lever
position degrees: 13...17
Setting point w/out bumper spring
Speed rpm : 375
Rack travel in mm : 5.5

Testing:

Speed rpm : 250
Minimum rack travel: 11.5
Speed rpm : 375
Rack travel in mm : 5.40...5.60
Rack travel in mm : 1.50
Speed rpm : 630...730
Speed rpm : 1000
Maximum rack travel: 1.00

SET IDLE AUXILIARY SPRING

Speed rpm : 400
Rack travel in mm : 4.40...4.60
 : (4.30...4.70)

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1000
Rack travel in m: 11.10...11.20
2nd speed rpm : 1800
Rack travel in m: 10.80...11.00
3rd speed rpm : 2200
Rack travel in m: 10.30...10.50

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1800
Del. quantity cm³/ : 34.0...35.5
 1000 s: (33.0...36.5)
Spread cm³ : 2.50
 1000 s: (3.00)
Speed rpm : 2200
Del. quantity cm³/ : 33.0...35.0
 1000 s: (32.0...36.0)
Spread cm³ : 2.50
 1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 55.0...0.0
 1000 s: (55.0...0.0)
Rack travel in mm : 20.1...0.00

HIGH IDLE

1st version

Speed rpm : 2500
Rack travel in mm : 7.80...8.20
Del. quantity cm³/ : 22.0...26.0
 1000 s: (21.0...27.0)
Spread cm³ : 2.50
 1000 s: (3.00)

LOW IDLE

Speed rpm : 375

Rack travel in mm : 5.40...5.60
Del. quantity cm³/ : 5.0...6.0
 1000 s: (4.5...9.0)
Spread cm³ : 1.00
 1000 s: (1.50)

SETTING PNEUMATIC FAST IDLE (ELA)

Speed rpm : 425
Rack travel in mm : (7.0...8.6)
Del. quantity cm³/ : (13.0...21.0)
 1000 s: -
Vacuum hPa : 0.40

Remarks:

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

-Control-lever position 49^o, max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
Control-lever position 46.5^o,
control-rod travel deduction must be
greater than 0.2 mm after switchover
point (of starting cam).

SETTING OF FBG

-Setting and locking of FBG according
to start-of-delivery average of all
cylinders 19.3...19.7^o (19.2...19.8^o).
Cam angle according to cyl. 1.

Start-of-delivery spacing (difference)
between max/min value 1^o cam angle
maximum.

TESTING PNEUMATIC SHUTOFF DEVICE

-Control lever at idle stop.
With n = 375 1/min, and pu = 450 mbar,
control rod must move quickly to
control-rod travel = 0 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 G 26
 Edition : 07.03.88
 Replaces : 28.11.86
 Test oil : ISO-4113
 Combination no. : 0 400 463 152
 Injection pump
 Pump designation : PES3A800410/3RS1350
 EP type number : 0 410 483 023
 Governor
 Governor design. : RSV325...1175ABC2163
 -3L
 Governor no. : 0 420 232 474

Customer-spec. information
 Customer : KHD

Engine : F3L912

1st version kW : 34.0
 Rated speed : 2350

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 2

Phasing : 0-120-240

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 10.30...10.40

Del. quantity cm³/ : 4.9...5.0

100 s: (4.8...5.2)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 325.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 1.0...1.6

100 s: (0.8...1.7)

Spread cm³ : 0.2

100 s: (0.3)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 6.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Del. quantity : 49.5...50.5

1000 : (48.0...52.0)

Spread cm³ : 2.50

1000 : (3.50)

RATED SPEED

1st version

Control lever

position degrees: 56...64

Testing:

1st rack travel in: 8.20

Speed rpm : 1215...1225

2nd rack travel in: 4.00

Speed rpm : 1245...1275
3rd rack travel in: 4.00
Speed rpm : 1255...1285
4th rack travel in: 1420
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 20...28
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 480...540

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1175
Rack travel in m: 9.20...9.30
2nd speed rpm : 500
Rack travel in m: 10.60...10.70
4th speed rpm : 970
Rack travel in m: 9.90...10.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1175
Del.quantity cm3/ : 47.5...51.5
1000 s: (45.5...53.5)
Speed rpm : 500
Del.quantity cm3/ : 48.5...49.5
1000 s: (46.5...51.5)
Spread cm3 : 2.00
1000 s: (-)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.20
Speed rpm : 1215...1225

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 115.0...125.0
1000 s: (112.0...128.0)
Rack travel in mm : 17.10...17.30

Remarks:

: TKS 2.40

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 G 29
Edition : 12.02.88
Replaces : 11.12.87
Test oil : ISO-4113

Combination no. : 0 400 463 154

Injection pump
Pump designation : PES3A80D410/3RS1350
EP type number : 0 410 483 023
Governor
Governor design. : RSV325...1175A8C2223
Governor no. : 0 420 232 482

Customer-spec. information
Customer : KHD

Engine : F3L912

1st version kW : 33.0
Rated speed : 2350

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.90...2.00
: (1.85...2.05)

Rack travel in mm : 9.00...12.00
Firing order : 1- 3- 2

Phasing : 0-120-240

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 10.20...10.50

Del. quantity cm³/ : 4.8...4.9

100 s : (4.6...5.0)

Spread cm³ : 0.2

100 s : (0.4)

2nd speed rpm : 325.0

Rack travel in mm : 6.2...6.4

Del. quantity cm³/ : 1.0...1.6

100 s : (0.8...1.7)

Spread cm³ : 0.2

100 s : (0.3)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Del. quantity : 48.0...49.0

1000 : (46.5...50.5)

Spread cm³ : 2.50

1000 : (4.00)

RATED SPEED

1st version

Control lever

position degrees: 52...60

Testing:

1st rack travel in: 8.10

Speed rpm : 1215...1225

2nd rack travel in: 4.00

Speed rpm : 1240...1270
3rd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1420
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.8

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 6.20...6.40
Rack travel in mm : 2.00
Speed rpm : 465...525

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 800
Rack travel in m: 8.80...8.90
2nd speed rpm : 500
Rack travel in m: 10.60...10.70
3rd speed rpm : 800
Rack travel in m: 10.20...10.50
4th speed rpm : 1175
Rack travel in m: 9.10...9.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1175
Del. quantity cm³/ : 46.0...50.0
1000 s: (44.0...52.0)
Speed rpm : 800
Del. quantity cm³/ : 33.0...34.0
1000 s: (31.0...36.0)
Spread cm³ : 2.50
1000 s: (4.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.10
Speed rpm : 1215...1225

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 100.0...110.0
1000 s: (97.0...113.0)

Rack travel in mm : 17.00...17.30

Remarks: : RENAULT

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 19,0 H
Edition : 19.02.88
Replaces : 18.12.87
Test oil : ISO-4113

Combination no. : 0 400 640 100

Injection pump
Pump designation : PE12A95D610LS2453
EP type number : 0 410 690 998
Governor
Governor design. : RQV300...1150AB1047D
L
Governor no. : 0 420 214 242

Customer-spec. information
Customer : KHD

Engine : F12L413FW

1st version kW : 230.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)

Rack travel in mm : 9.00...12.00
Firing order : 1- 4- 9- 8- 5- 2-
11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
180-195-240-255-300-
315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.20...9.30

Del. quantity cm³/ : 8.1...8.3

100 s: (7.9...8.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0
Rack travel in mm : 5.9...6.1
Del. quantity cm³/ : 0.9...1.5
100 s: (0.6...1.7)
Spread cm³ : 0.3
100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.20...1.30
2nd speed rpm : 395
travel mm : 2.20...2.60
3rd speed rpm : 610
travel mm : 3.10...3.60
4th speed rpm : 1195
travel mm : 8.40...8.50
5th speed rpm : 1235
travel mm : 8.90...9.10

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1180
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150

Del. quantity : 81.0...83.0
1000 : (79.0...85.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 60...68

Testing:

1st rack travel in: 8.10
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1225...1255
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 17...25

Testing:

Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION

Speed rpm : 320...425

TORQUE CONTROL

Dimension a mm : 0.40
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.10...9.20
2nd speed rpm : 500
Rack travel in m: 9.50...9.60
3rd speed rpm : 935
Rack travel in m: 9.40...9.50
4th speed rpm : 1045
Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 93.5...96.5
1000 s: (91.0...99.0)
Speed rpm : 750
Del. quantity cm³/ : 84.5...87.5
1000 s: (82.0...90.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

2. Set fuel delivery in fuel-delivery
characteristics with stop above the
governor housing.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 9,6 N 1
 Edition : 05.02.88
 Replaces : 7.12.87
 Test oil : ISO-4113

Combination no. : 0 400 646 266

Injection pump
 Pump designation : PE6A95D410LS2587
 EP type number : 0 410 696 983
 Governor
 Governor design. : RQV300...1150AB1088L
 Governor no. : 0 420 212 115

Customer-spec. information
 Customer : KHD

Engine : F6L413 FW

1st version kW : 106.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)
 Rack travel in mm : 9.00...12.00

G20

Firing order : 1- 6- 5- 4- 3- 2

Phasing : 0-75-120-195-240-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.30...8.40

Del. quantity cm³/ : 7.2...7.4

100 s: (7.0...7.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.30

2nd speed rpm : 400
 travel mm : 2.30...2.70

3rd speed rpm : 600
 travel mm : 3.00...3.50

4th speed rpm : 1195
 travel mm : 8.40...8.50

5th speed rpm : 1235
 travel mm : 8.90...9.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del. quantity : 72.0...74.0

1000 : (70.0...76.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:
1st rack travel in: 7.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 12...20

Testing:
Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 320...420

TORQUE CONTROL

Dimension a mm : 1.00
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.30...8.40
2nd speed rpm : 500
Rack travel in m: 9.30...9.40
3rd speed rpm : 935
Rack travel in m: 9.00...9.20
4th speed rpm : 1045
Rack travel in m: 8.50...8.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 800
Del. quantity cm³/ : 78.0...81.0
1000 s: (75.5...83.5)
Speed rpm : 650
Del. quantity cm³/ : 93.5...96.5
1000 s: (91.0...99.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 7.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.40...14.80

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

2. Set fuel delivery in fuel-delivery
characteristics with stop above the
governor housing.

When accelerating from engine speed
"0", no voltage in starting solenoid.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 12,7 L
Edition : 05.02.88
Replaces : 9.83
Test oil : ISO-4113

Combination no. : 0 400 648 116

Injection pump
Pump designation : PE8A9SD41OLS2451
EP type number : 0 410 698 992
Governor
Governor design. : RQV300...1150AB1044D
L
Governor no. : 0 420 214 240

Customer-spec. information
Customer : KHD

Engine : F8L413FW

1st version kW : 153.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)

Rack travel in mm : 9.00...12.00
Firing order : 1- 8- 7- 2- 6- 5-
4- 3

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.10...9.20

Del. quantity cm³/ : 7.8...8.0

100 s: (7.6...8.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0
Rack travel in mm : 5.9...6.1
Del. quantity cm³/ : 0.9...1.5
100 s: (0.6...1.7)
Spread cm³ : 0.3
100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1150
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150
Del. quantity : 78.5...80.5
1000 : (76.5...82.5)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 60...68

Testing:
1st rack travel in: 8.10
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1225...1255
4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 7...15

Testing:

Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 540...600

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.40
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.10...9.20
2nd speed rpm : 950
Rack travel in m: 9.10...9.40
3rd speed rpm : 850
Rack travel in m: 9.40...9.60
4th speed rpm : 500
Rack travel in m: 9.50...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 93.5...96.5
1000 s: (91.0...99.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

Rack travel in mm : 15.40...15.80

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

2. Set fuel delivery in fuel-delivery
characteristics with stop above the
governor housing.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 12,7 N1
 Edition : 07.03.88
 Replaces : 12.9.86
 Test oil : ISO-4113

Combination no. : 0 400 648 124

Injection pump
 Pump designation : PE8A95D410LS2588
 EP type number : 0 410 698 989
 Governor
 Governor design. : RQV300...1150AB1088
 Governor no. : 0 420 212 115

Customer-spec. information
 Customer : KHD

Engine : F8L413FW

1st version kW : 153.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

 Rack travel in mm : 9.30...9.40

 Del. quantity cm³/ : 7.1...7.3

 100 s : (6.9...7.5)

 Spread cm³ : 0.3

 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 7.2...7.4
 Del. quantity cm³/ : 1.4...2.0
 100 s : (1.1...2.2)
 Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.30
 2nd speed rpm : 400
 travel mm : 2.20...2.60
 3rd speed rpm : 600
 travel mm : 3.00...3.50
 4th speed rpm : 1195
 travel mm : 8.50...8.50
 5th speed rpm : 1245
 travel mm : 9.10...9.30

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1200
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 71.0...73.0
 1000 : (69.0...75.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:
1st rack travel in: 8.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:
Speed rpm : 100
Minimum rack travel: 7.80
Speed rpm : 300
Rack travel in mm : 6.20...6.40

CONSTANT REGULATION
Speed rpm : 320...430

TORQUE CONTROL
Dimension a mm : 1.00
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.30...9.40
2nd speed rpm : 500
Rack travel in m: 10.30...10.40
3rd speed rpm : 935
Rack travel in m: 10.00...10.20
4th speed rpm : 1045
Rack travel in m: 9.50...9.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 800
Del. quantity cm³/ : 77.5...80.5
1000 s: (75.0...83.0)
Speed rpm : 650
Del. quantity cm³/ : 93.5...96.5
1000 s: (91.0...99.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

2. Set fuel delivery in fuel-delivery
characteristics with stop above the
governor housing.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 15,8 C
 Edition : 05.02.88
 Replaces : 9.82
 Test oil : ISO-4113

Combination no. : 0 400 649 208

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB1047D
 L
 Governor no. : 0 420 214 242

Customer-spec. information
 Customer : KHD

Engine : F10L413FW

1st version kW : 192.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1-10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.10...9.20

Del. quantity cm³/ : 7.8...8.0

100 s: (7.6...8.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del. quantity : 78.5...80.5

1000 : (76.5...82.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 8.10

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1225...1255

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 7...15

Testing:

Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 540...600

CONSTANT REGULATION

Speed rpm : 325...400

TORQUE CONTROL

Dimension a mm : 0.40
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.10...9.20
2nd speed rpm : 950
Rack travel in m: 9.10...9.40
3rd speed rpm : 850
Rack travel in m: 9.40...9.60
4th speed rpm : 500
Rack travel in m: 9.50...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 93.5...96.5
1000 s: (91.0...99.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

2. Set fuel delivery in fuel-delivery
characteristics with stop above the
governor housing.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 I
 Edition : 12.02.88
 Replaces : 9.85
 Test oil : ISO-4113

Combination no. : 0 400 836 023

Injection pump
 Pump designation : PES6A85D410/3RS2415
 EP type number : 0 410 886 915
 Governor
 Governor design. : RQV300...1250AB1131L
 Govenor no. : 0 420 212 144

Customer-spec. information
 Customer : KHD

Engine : 9F6L913T

1st version kW : 96.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)
 Rack travel in mm : 9.00...12.00

G28

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 7.8...7.9

100 s: (7.6...8.1)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 300.0

Rack travel in mm : 8.4...8.6

Del. quantity cm³/ : 0.9...1.5

100 s: (0.7...1.7)

Spread cm³ : 0.2

100 s: (0.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.30...1.40

2nd speed rpm : 460

travel mm : 3.10...3.40

3rd speed rpm : 1290

travel mm : 8.10...8.20

4th speed rpm : 1415

travel mm : 9.20...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 78.0...79.0

1000 : (76.0...81.0)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever
position degrees: 61...69

Testing:

1st rack travel in: 11.00
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1400...1430
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 69...77

Testing:

Speed rpm : 100
Minimum rack travel: 10.00
Speed rpm : 300
Rack travel in mm : 8.40...8.60

CONSTANT REGULATION

Speed rpm : 440...550

TORQUE CONTROL

Dimension a mm : 0.80
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 12.00...12.10
2nd speed rpm : 600
Rack travel in m: 12.80...12.90
3rd speed rpm : 790
Rack travel in m: 12.60...12.80
4th speed rpm : 910
Rack travel in m: 12.10...12.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm³/ : 71.5...73.5
1000 s: (69.0...76.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

H01

Speed rpm : 100
Del.quantity cm³/ : 105.0...115.0
1000 s: (102.0...118.0)
Rack travel in mm : 17.40...17.80

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 Q
Edition : 26.02.88
Replaces : 11.12.87
Test oil : ISO-4113
Combination no. : 0 400 836 035
Injection pump
Pump designation : PES6A85D410/3RS2749
EP type number : 0 410 886 896
Governor
Governor design. : RQV325...1250AB1131-1L
Governor no. : 0 420 212 211

Customer-spec. information
Customer : KHD

Engine : F6L913

1st version kW : 84.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
: (2.45...2.65)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.30...10.40

Del. quantity cm³/ : 6.6...6.7

100 s: (6.4...6.9)

Spread cm³ : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 7.0...7.2

Del. quantity cm³/ : 1.0...1.6

100 s: (0.8...1.8)

Spread cm³ : 0.2

100 s: (0.4)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325

travel mm : 1.60...1.70

2nd speed rpm : 460

travel mm : 3.00...3.30

3rd speed rpm : 525

travel mm : 3.50...4.00

4th speed rpm : 1310

travel mm : 8.20...8.30

5th speed rpm : 1390

travel mm : 9.00...9.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1310

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 66.0...67.0

1000 : (64.0...69.0)

Spread cm³ : 3.00

1000 : (5.00)

RATED SPEED

1st version
Control lever
position degrees: 63...71

Testing:
1st rack travel in: 9.30
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1375...1405
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 13...21

Testing:
Speed rpm : 100
Minimum rack trave: 8.50
Speed rpm : 325
Rack travel in mm : 7.00...7.20

CONSTANT REGULATION

Speed rpm : 440...550

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.30...10.40
2nd speed rpm : 500
Rack travel in m: 10.80...10.90
3rd speed rpm : 1000
Rack travel in m: 10.60...10.80
4th speed rpm : 1135
Rack travel in m: 10.40...10.60

START CUT-OUT

Speed 1/min : 245 (265)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 800
Del. quantity cm³/ : 55.0...57.0
1000 s: (52.5...59.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.30
Speed rpm : 1290...1300

H03

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 105.0...115.0
1000 s: (102.0...118.0)
Rack travel in mm : 16.30...16.70

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,1 K1
Edition : 22.01.88
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 400 846 379

Injection pump
Pump designation : PES6A95D41QLS2489
EP type number : 0 410 896 949
Governor
Governor design. : RQ250/1050AB894DL
Governor no. : 0 420 202 256

Customer-spec. information
Customer : MAN

Engine : D2566MUH

1st version kW : 141.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 003

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.50...1.60
: (1.45...1.65)

Rack travel in mm : 9.00...12.00

H04

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 10.00...10.10

Del. quantity cm³/ : 10.1...10.3

100 s : (9.9...10.5)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 1.2...1.8

100 s : (0.9...2.0)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.40...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del. quantity : 101.5...103.5

1000 : (99.5...105.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 15.9

Testing:

1st rack travel in: 9.00

Speed rpm : 1095...1110

2nd rack travel in: 4.00

Speed rpm : 1140...1170

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 360...400

TORQUE CONTROL

Dimension a mm : 0.35

Torque control curve - 1st version

1st speed rpm : 1050

Rack travel in m: 10.00...10.10

2nd speed rpm : 500

Rack travel in m: 10.50...10.60

4th speed rpm : 960

Rack travel in m: 10.10...10.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500

Del. quantity cm3/ : 99.5...103.5

1000 s: (97.5...105.5)

Speed rpm : 700

Del. quantity cm3/ : 99.5...103.5

1000 s: (97.5...105.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.00

Speed rpm : 1095...1110

INTERMEDIATE RATED SPEED

Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm3/ : 116.5...126.5

1000 s: (113.5...129.5)

Rack travel in mm : 12.50...14.50

Remarks:

: MAN-NR. 1-7752

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,1 X
 Edition : 10.3.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 846 441
 Injection pump
 Pump designation : PES6A95D410LS2607
 EP type number : 0 410 896 936
 Governor
 Governor design. : RQV750AB95SL
 Governor no. : 0 420 212 073

Customer-spec. information
 Customer : MAN

Engine : D2566 ME

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.00
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 1.50...1.60
 : (1.45...1.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50(0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

 Rack travel in mm : 12.00...12.10

 Del. quantity cm³/ : 11.8...12.0

 100 s: (11.6...12.2)

 Spread cm³ : 0.3

 100 s: (0.6)

2nd speed rpm : 250
 Rack travel in mm : ?
 Del. quantity cm³/ : 0.9...1.5
 100 s: (-)
 Spread cm³ : 0.3
 100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del. quantity : 118.0...120.0
 1000 : (116.0...122.0)
 Spread cm³ : 3.0
 1000 : (6.0)

RATED SPEED

1st version
 Control lever
 position degrees: 25...33

Testing:
 1st rack travel in: 11.00
 Speed rpm : 750...755
 2nd rack travel in: 4.00
 Speed rpm : 770...780

Remarks:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,1P21
Edition : 10.3.88
Replaces : 22.5.87
Test oil : ISO-4113

Combination no. : 0 400 846 502

Injection pump
Pump designation : PES6A95D410LS2542
EP type number : 0 410 896 936
Governor
Governor design. : RQ250/1100AB1137-2L
Governor no. : 0 420 200 084

Customer-spec. information
Customer : MAN

Engine : D2566 M/MF

1st version kW : 177.0
Rated speed : 2200
2nd version kW : 168.0*
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
: (1.45...1.65)
Rack travel in mm : 9.00...12.00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 12.4...12.6

100 s : (12.2...12.8)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250

Rack travel in mm : 6.5...6.7

Del. quantity cm³/ : 0.8...1.4

100 s : (0.5...1.6)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 124.5...126.5

1000 : (122.5...128.5)

Spread cm³ : 3.00

1000 : (6.00)

2nd version

Speed rpm : 1100

Del. quantity cm³/ : 118.0...120.0 *

1000 s : (116.0...122.0)

Spread cm³ : 3.00

1000 s : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 11.00
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1195...1225

2nd version

Setting point:

Speed rpm : 600 *
Rack travel in mm : 16.0

Testing:

1st rack travel in: 11.00
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1195...1225

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.00

Testing:

Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 360...400

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.00...12.10
2nd speed rpm : 500
Rack travel in m: 12.00...12.20

Torque control curve - 2nd version

1st speed rpm : - *
Rack travel in m: -
2nd speed rpm : -
Rack travel in m: -

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del. quantity cm³/ : 107.5...113.5
1000 s: (105.5...115.5)
Speed rpm : 750
Del. quantity cm³/ : 110.5...113.5
1000 s: (108.0...116.0)

2nd version

Speed rpm : 500

H08

Del. quantity cm³/ : 102.0...108.0 *
1000 s: (100.0...110.0)
Speed rpm : 750
Del. quantity cm³/ : 106.0...109.0
1000 s: (104.0...111.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1145...1160

2nd version

1mm rack travel less than
full load rack tr: 11.00
Speed rpm : 1145...1160 *

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 122.0...132.0
1000 s: (119.0...135.0)
Rack travel in mm : 15.50...15.90

Remarks:

: MAN-NR. 2-7434

* Version 2

*Tropics version

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,4 b2
 Edition : 26.02.88
 Replaces : 22.1.88
 Test oil : ISO-4113

Combination no. : 0 400 846 507

Injection pump
 Pump designation : PES6A95D410LS2639
 EP type number : 0 410 896 925
 Governor
 Governor design. : RQ250...1100AB1137-6L
 Governor no. : 0 420 200 088

Customer-spec. information
 Customer : MAN

Engine : D2566MUH

1st version kW : 147.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 1.70...1.80
 : (1.65...1.85)

H09

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

 Rack travel in mm : 13.40...13.50

 Del. quantity cm³/ : 12.6...12.8

 100 s : (12.4...13.0)

 Spread cm³ : 0.3

 100 s : (0.6)

 2nd speed rpm : 250.0
 Rack travel in mm : 7.0...7.2
 Del. quantity cm³/ : 0.9...1.5
 100 s : (0.6...1.7)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 600
 Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del. quantity : 126.0...128.0
 1000 : (124.0...130.0)
 Spread cm³ : 3.00
 1000 : (6.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 16.0

Testing:
 1st rack travel in: 11.50
 Speed rpm : 1145...1160
 2nd rack travel in: 4.00
 Speed rpm : 1245...1275

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 385...425

Speed rpm : 450

Maximum rack trave: 1.00

TORQUE CONTROL

Dimension a mm : 0.40

Torque control curve - 1st version

1st speed rpm : 1100

Rack travel in m: 12.50...12.60

2nd speed rpm : 600

Rack travel in m: 13.40...13.50

3rd speed rpm : 860

Rack travel in m: 13.10...13.30

4th speed rpm : 910

Rack travel in m: 12.60...12.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100

Del.quantity cm3/ : 127.0...130.0

1000 s: (124.5...132.5)

Speed rpm : 500

Del.quantity cm3/ : 126.5...130.5

1000 s: (124.5...132.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50

Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 95.0...105.0

1000 s: (92.0...108.0)

Rack travel in mm : 13.60...14.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE 8,4 b
Edition : 26.02.88
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 400 846 536

Injection pump
Pump designation : PES6A100D41ORS2687
EP type number : 0 410 806 001
Governor
Governor design. : RQV400...1000AB1203L
Governor no. : 0 420 212 177

Customer-spec. information
Customer : LIEBHERR

Engine : D906T

1st version kW : 132.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 40...45

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.70...2.80
: (2.65...2.85)
Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
& maximum rack tra: 21.00
Difference ° CS : 4.00...5.00

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.50...11.60

Del. quantity cm³/ : 10.8...11.0

100 s: (10.6...11.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 400.0
Rack travel in mm : 6.9...7.1
Del. quantity cm³/ : 1.0...1.6
100 s: (0.7...1.8)
Spread cm³ : 0.3
100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 375
travel mm : 1.00...1.10
2nd speed rpm : 600
travel mm : 3.70...4.00
3rd speed rpm : 1000
travel mm : 7.50...7.60
4th speed rpm : 1150
travel mm : 9.50...10.20

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1070
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Aneroid pressure h: 700

Del. quantity : 108.0...110.0
1000 : (106.0...112.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 58...66

Testing:
1st rack travel in: 10.50
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1105...1135
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 10...18

Testing:
Speed rpm : 100
Minimum rack travel: 8.40
Speed rpm : 400
Rack travel in mm : 6.90...7.10

CONSTANT REGULATION

Speed rpm : 420...530

TORQUE CONTROL

Dimension a mm : 1.30
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 11.50...11.60
2nd speed rpm : 500
Rack travel in m: 12.80...12.90
4th speed rpm : 900
Rack travel in m: 11.80...12.00

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav. mm: 12.80...12.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.50...12.60
2nd pressure hPa : 420
Rack travel in m: 12.60...12.70

START CUT-OUT

Speed 1/min : 320 (340)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 700
Del. quantity cm³/ : 118.5...121.5
1000 s: (116.0...124.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 103.0...107.0
1000 s: (101.0...109.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.50
Speed rpm : 1040...1050

INTERMEDIATE RATED SPEED

Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 113.0...123.0
1000 s: (110.0...126.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 6.90...7.10
Del. quantity cm³/ : 10.0...16.0
1000 s: (7.5...18.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 g 1
Edition : 05.02.88
Replaces : 10.85
Test oil : ISO-4113

Combination no. : 0 400 863 007

Injection pump
Pump designation : PES3A85D410/3RS2642
EP type number : 0 410 883 989
Governor
Governor design. : RSV325...1150A8C2102
-1L
Governor no. : 0 420 232 365

Customer-spec. information
Customer : KHD

Engine : F3L913

1st version kW : 42.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
: (2.45...2.65)

Rack travel in mm : 9.00...12.00
Firing order : 1- 3- 2

Phasing : 0-120-240
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.80...11.90

Del. quantity cm³/ : 6.6...6.7

100 s: (6.4...6.9)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 325.0

Rack travel in mm : 8.9...9.1

Del. quantity cm³/ : 1.6...2.2

100 s: (1.4...2.4)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 66.0...67.0

1000 : (64.0...69.0)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 48...56

Testing:

1st rack travel in: 10.00

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1215...1245

3rd rack travel in: 4.00

Speed rpm : 1240...1270

4th rack travel in: 1400

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 14...22

Setting point w/out bumper spring

Speed rpm : 325

Rack travel in mm : 8.5

Testing:

Speed rpm : 100

Speed rpm : 325

Rack travel in mm : 8.40...8.60

Rack travel in mm : 2.00

Speed rpm : 455...515

TORQUE CONTROL

Dimension a mm : 0.80

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 11.00...11.10

2nd speed rpm : 700

Rack travel in m: 11.80...11.90

3rd speed rpm : 1015

Rack travel in m: 11.50...11.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1150

Del. quantity cm³/ : 70.5...73.5

1000 s: (68.5...75.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 133.0...143.0

1000 s: (130.0...146.0)

Rack travel in mm : 19.50...21.00

Remarks:

: D6007

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 3,1 b 1
Edition : 19.02.88
Replaces : 11.12.87
Test oil : ISO-4113

Combination no. : 0 400 863 008

Injection pump
Pump designation : PES3A900320/3RS2658
EP type number : 0 410 893 004
Governor
Governor design. : RSV325...1500A2C505-
2R
Governor no. : 0 420 233 196

Customer-spec. information
Customer : MWM

Engine : D226B-3

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Frestroke mm : 2,95...3,05
: (2,90...3,10)

Rack travel in mm : 9,00...12,00

Firing order : 1- 2- 3

Phasing : 0-120-240

Tolerance + - ° : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m : 9.00...0.00
& maximum rack tra : 21.00
Difference ° CS : 3.50...4.50

BASIC SETTING

1st speed rpm : 1500

Rack travel in mm : 11.20...11.30

Del. quantity cm³/ : 8.9...9.0

100 s : (8.7...9.2)

Spread cm³ : 0.3

100 s : (0.5)

2nd speed rpm : 325.0
Rack travel in mm : 10.0...10.2
Del. quantity cm³/ : 4.6...5.2
100 s : (4.4...5.4)
Spread cm³ : 0.2
100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1500
Del. quantity : 89.5...90.5
1000 : (87.5...92.5)
Spread cm³ : 3.00
1000 : (5.00)

RATED SPEED

1st version
Control lever
position degrees: 54...62

Testing:
1st rack travel in: 10.20
Speed rpm : 1540...1550

2nd rack travel in: 4.00
Speed rpm : 1590...1620
3rd rack travel in: 4.00
Speed rpm : 1605...1635
4th rack travel in: 1765
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 11...19
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 9.6

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 10.00...10.20
Rack travel in mm : 2.00
Speed rpm : 500...560

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1500
Rack travel in m: 11.20...11.30
2nd speed rpm : 500
Rack travel in m: 11.20...11.40

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.20
Speed rpm : 1540...1550

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 115.0...
1000 s: (112.0...)
Rack travel in mm : 16.80

Remarks:
;

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 G 3
 Edition : 2.2.88
 Replaces : 9.3.87
 Test oil : ISO-4113

Combination no. : 0 400 864 054

Injection pump
 Pump designation : PES4A85D410/3RS2638
 EP type number : 0 410 884 950
 Governor
 Governor design. : RSV305...1150AOC2168
 L
 Governor no. : 0 420 232 364

Customer-spec. information
 Customer : KHD

Engine : BF4L913

1st version kW : 66.0
 Rated speed : 2300
 2nd version kW : 60.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6,00X2,00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

H17

Prestroke mm : 2.50...2.60
 : (2.45...2.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1110

 Rack travel in mm : 12.30...12.40

 Del. quantity cm³/ : 8.0...8.1

 100 s : (7.8...8.3)

 Spread cm³ : 0.3

 100 s : (0.4)

2nd speed rpm : 325
 Rack travel in mm : 8.1...8.3
 Del. quantity cm³/ : 0.9...1.5
 100 s : (0.7...1.7)
 Spread cm³ : 0.2
 100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1110
 Del. quantity : 80.0...81.0
 1000 : (78.0...83.0)
 Spread cm³ : 3.00
 1000 : (4.50)

2nd version
 Speed rpm : 1150
 Del. quantity cm³/ : 74.5...75.5
 1000 s : (72.5...77.5)
 Spread cm³ : 3.00
 1000 s : (4.50)

RATED SPEED

1st version
 Control lever
 position degrees: 51...59

Testing:

1st rack travel in: 11.30
 Speed rpm : 1155...1165
 2nd rack travel in: 4.00
 Speed rpm : 1250...1280
 3rd rack travel in: 4.00
 Speed rpm : 1320...1350
 4th rack travel in: 1465
 Speed rpm : 0.30...1.40

2nd version

Control lever
 position degrees: 52...60

Testing:

1st rack travel in: 9.60
 Speed rpm : 1220...1230
 2nd rack travel in: 4.00
 Speed rpm : 1325...1355
 4th rack travel in: 1475
 Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
 position degrees: 27...35
 Setting point w/out bumper spring
 Speed rpm : 325
 Rack travel in mm : 7.7
 Speed rpm : 325
 Rack travel in mm : 7.60...7.80
 Rack travel in mm : 2.00
 Speed rpm : 700...800

TORQUE CONTROL

Torque control curve - 1st version
 1st speed rpm : 1110
 Rack travel in m: 12.30...12.40
 2nd speed rpm : 500
 Rack travel in m: 13.10...13.20
 3rd speed rpm : 940
 Rack travel in m: 12.70...12.90

Torque control curve - 2nd version

1st speed rpm : 1150
 Rack travel in m: 10.5...10.6
 2nd speed rpm : 500
 Rack travel in m: 11.2...11.3
 3rd speed rpm : 900
 Rack travel in m: 10.9...11.2

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
 Del.quantity cm³/ : 79.5...81.5
 1000 s: (77.0...84.0)

2nd version

H18

Speed rpm : 800
 Del.quantity cm³/ : 65.5...68.5
 1000 s: (63.5...70.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.30

Speed rpm : 1155...1165

2nd version

1mm rack travel less than

full load rack tr: 9.50

Speed rpm : 1220...1230

STARTING FUEL DELIVERY

Speed rpm : 100
 Del.quantity cm³/ : 100.0...110.0
 1000 s: (97.0...113.0)

Rack travel in mm : 16.80...17.20

Remarks:

: S29=DX 92=DX4.70 (1)
 : S28=DX 86=DX4.50 (2)

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 4,1 d 3
Edition : 12.02.88
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 400 864 060

Injection pump
Pump designation : PES4ABSD410/3RS2638
EP type number : 0 410 884 950
Governor
Governor design. : RSV325...1400A8C707L
Governor no. : 0 420 232 336

Customer-spec. information
Customer : KHD

Engine : BF4L913

1st version kW : 78.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.50...2.60
: (2.45...2.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 12.70...12.80

Del. quantity cm³/ : 8.2...8.3
100 s : (8.0...8.5)

Spread cm³ : 0.3
100 s : (0.4)

2nd speed rpm : 325.0
Rack travel in mm : 8.5...8.7
Del. quantity cm³/ : 0.9...1.5
100 s : (0.7...1.7)

Spread cm³ : 0.2
100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3

Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 5.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1250
Aneroid pressure h: 700
Del. quantity : 82.5...83.5
1000 : (80.5...85.5)

Spread cm³ : 3.00
1000 : (4.50)

RATED SPEED

1st version
Control lever
position degrees: 58...66

Testing:
1st rack travel in: 11.70
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1340...1370
3rd rack travel in: 4.00

Speed rpm : 1390...1420
4th rack travel in: 1560
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 8.1

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 8.50...8.70
Rack travel in mm : 2.00
Speed rpm : 630...690

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 12.70...12.80
2nd speed rpm : 500
Rack travel in m: 13.60...13.70
4th speed rpm : 1015
Rack travel in m: 13.10...13.30

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 13.60...13.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.30...12.40
2nd pressure hPa : 410
Rack travel in m: 13.20...13.30
3rd pressure hPa : 250
Rack travel in m: 12.60...12.80

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 850
Del.quantity cm³/ : 84.5...86.5
1000 s: (82.0...89.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 59.5...61.5
1000 s: (57.5...63.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 95.0...105.0
1000 s: (92.0...108.0)
Rack travel in mm : 17.10...17.50

Remarks:

:

Test electrically-released starting
quantity (EES) with 12 volts

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 g 34
Edition : 12.02.88
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 864 070
Injection pump
Pump designation : PES4A85D410/3RS2732
EP type number : 0 410 884 947
Governor
Governor design. : RSV325...1175A8C2223
-2L
Governor no. : 0 420 232 484

Customer-spec. information
Customer : KHD

Engine : F4L913

1st version kW : 56.0
Rated speed : 2350

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
: (2.45...2.65)

Rack travel in mm : 9.00...12.00
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1175

Rack travel in mm : 9.90...10.00

Del. quantity cm³/ : 6.8...6.9

100 s: (6.6...7.1)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 325.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 0.8...1.4

100 s: (0.6...1.6)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1175

Del. quantity : 68.0...69.0

1000 : (66.0...71.0)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 52...60

Testing:

1st rack travel in: 8.90

Speed rpm : 1215...1225

2nd rack travel in: 4.00

Speed rpm : 1245...1275

3rd rack travel in: 4.00

Speed rpm : 1250...1280
4th rack travel in: 1425
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.6

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 450...510

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1175
Rack travel in m: 9.90...10.00
2nd speed rpm : 500
Rack travel in m: 10.50...10.60
4th speed rpm : 820
Rack travel in m: 10.10...10.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del. quantity cm³/ : 61.0...63.0
1000 s: (58.5...65.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.90
Speed rpm : 1215...1225

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 115.0...125.0
1000 s: (112.0...128.0)
Rack travel in mm : 17.10...17.30

Remarks:

: RENAULT

APPLICATION

Tractor (tractor engines)

H22

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 4,0 b
Edition : 26.02.88
Replaces : 21.8.87
Test oil : ISO-4113

Combination no. : 0 400 874 240

Injection pump
Pump designation : PES4A90D410RS2666
EP type number : 0 410 894 029
Governor
Governor design. : RSV350...1400AOC2006
-1L
Governor no. : 0 420 232 449

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 66.0
Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.25...2.35
: (2.20...2.40)

Rack travel in mm : 9.00...12.00
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1380
Rack travel in mm : 10.40...10.50
Del. quantity cm³/ : 6.3...6.4
100 s : (6.1...6.6)

Spread cm³ : 0.3
100 s : (0.4)

2nd speed rpm : 350.0
Rack travel in mm : 7.8...8.0
Del. quantity cm³/ : 0.6...1.0
100 s : (0.4...1.2)

Spread cm³ : 0.2
100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 4.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1380
Del. quantity : 63.0...64.0
1000 : (61.0...66.0)

Spread cm³ : 3.00
1000 : (4.50)

RATED SPEED

1st version
Control lever
position degrees: 59...67

Testing:

1st rack travel in: 9.40
Speed rpm : 1430...1440
2nd rack travel in: 4.00
Speed rpm : 1480...1510
4th rack travel in: 1575

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever

position degrees: 24...32

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 7.9

Testing:

Speed rpm : 100

Minimum rack trave: 19.50

Speed rpm : 350

Rack travel in mm : 7.80...8.00

Rack travel in mm : 2.00

Speed rpm : 480...540

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1380

Rack travel in m: 10.40...10.50

2nd speed rpm : 500

Rack travel in m: 11.70...11.80

3rd speed rpm : 900

Rack travel in m: 11.10...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500

Del.quantity cm³/ : 52.0...54.0

1000 s: (49.5...56.5)

Spread cm³ : -

1000 s: (5.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40

Speed rpm : 1430...1440

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 78.0...88.0

1000 s: (75.0...91.0)

Rack travel in mm : 16.30...16.70

LOW IDLE

Speed rpm : 350

Rack travel in mm : 7.80...8.00

H24

Del.quantity cm³/ : 6.0...10.0

1000 s: (4.0...12.0)

Spread

cm³ : 2.50

1000 s: (4.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 4,0 b 1
 Edition : 26.02.88
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 874 246

Injection pump
 Pump designation : PES4490D41ORS2666
 EP type number : 0 410 894 029
 Governor
 Governor design. : RSV350...1250AOC2006
 -5L
 Governor no. : 0 420 232 497

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 63.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.25...2.35
 : (2.20...2.40)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1230

Rack travel in mm : 10.70...10.80

Del. quantity cm³/ : 6.2...6.3

100 s : (6.0...6.5)

Spread cm³ : 0.3

100 s : (0.5)

2nd speed rpm : 350.0

Rack travel in mm : 7.9...8.1

Del. quantity cm³/ : 1.0...1.4

100 s : (0.8...1.6)

Spread cm³ : 0.2

100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1230

Del. quantity : 62.0...63.0

1000 : (60.0...65.0)

Spread cm³ : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 58...66

Testing:

1st rack travel in: 9.70

Speed rpm : 1270...1280

2nd rack travel in: 4.00

Speed rpm : 1350...1380

4th rack travel in: 1520

Speed rpm : 0.30...1.40

Spread cm³ : 2.50
1000 s: (4.50)

LOW IDLE 1

Control lever
position degrees: 31...39
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 8.0

Remarks:
:

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 350
Rack travel in mm : 7.90...8.10
Rack travel in mm : 2.00
Speed rpm : 480...540

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1230
Rack travel in m: 10.70...10.80
2nd speed rpm : 500
Rack travel in m: 12.00...12.10
3rd speed rpm : 880
Rack travel in m: 11.40...11.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del. quantity cm³/ : 54.0...56.0
1000 s: (51.5...58.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1270...1280

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 78.0...88.0
1000 s: (75.0...91.0)
Rack travel in mm : 16.30...16.70

LOW IDLE

Speed rpm : 350
Rack travel in mm : 7.90...8.10
Del. quantity cm³/ : 10.0...14.0
1000 s: (8.0...16.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RAB 9,7 a 4
 Edition : 05.02.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 266
 Injection pump
 Pump designation : PES6A9SD410RS2108
 EP type number : 0 410 896 983
 Governor
 Governor design. : RSV450...1000A1C2004
 DL
 Governor no. : 0 420 233 219

Customer-spec. information
 Customer : RABA

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.00
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 1,70...1,80
 : (1,65...1,85)
 Rack travel in mm : 9,00...12,00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

 Rack travel in mm : 11.10...11.20

 Del. quantity cm³/ : 10.7...10.9

 100 s: (10.5...11.1)

 Spread cm³ : 0.3

 100 s: (0.6)

 2nd speed rpm : 450.0
 Rack travel in mm : 5.9...6.1
 Del. quantity cm³/ : 1.1...1.7
 100 s: (0.8...1.9)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 6.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Del. quantity : 107.5...109.5
 1000 : (105.5...111.5)
 Spread cm³ : 3.00
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 57...65

Testing:
 1st rack travel in: 10.10
 Speed rpm : 1040...1050
 2nd rack travel in: 4.00
 Speed rpm : 1085...1115
 4th rack travel in: 1250
 Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 31...39
Setting point w/out bumper spring
Speed rpm : 450
Rack travel in mm : 5.5

Testing:
Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 450
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.00
Speed rpm : 475...535

TORQUE CONTROL
Dimension a mm : 2.00
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 11.10...11.20
2nd speed rpm : 800
Rack travel in m: 12.60...12.70
3rd speed rpm : 500
Rack travel in m: 12.60...12.80

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 800
Del. quantity cm³/ : 124.5...129.0
1000 s: (122.5...131.0)
Speed rpm : 500
Del. quantity cm³/ : 125.5...129.5
1000 s: (123.5...131.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.10
Speed rpm : 1040...1050

LOW IDLE

Speed rpm : 450
Rack travel in mm : 5.90...6.10
Del. quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.00
1000 s: (5.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 g 12
Edition : 07.03.88
Replaces : 12.11.87
Test oil : ISO-4113

Combination no. : 0 400 876 320

Injection pump
Pump designation : PES6A85D41ORS2591
EP type number : 0 410 886 903
Governor
Governor design. : RSV325...1150A8C2020
Governor no. : 0 420 232 345

Customer-spec. information
Customer : KHD

Engine : BF6L913

1st version kW : 117.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.50...2.60
: (2.45...2.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 12.30...12.40

Del. quantity cm³/ : 8.4...8.5

100 s : (8.2...8.7)

Spread cm³ : 0.3

100 s : (0.4)

2nd speed rpm : 325.0

Rack travel in mm : 7.9...8.1

Del. quantity cm³/ : 0.8...1.4

100 s : (0.6...1.6)

Spread cm³ : 0.2

100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 6.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Aneroid pressure h: 700

Del. quantity : 84.0...85.0

1000 : (82.0...87.0)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 55...63

Testing:

1st rack travel in: 11.30

Speed rpm : 1240...1250

2nd rack travel in: 4.00

Speed rpm : 1295...1325

3rd rack travel in: 4.00

Speed rpm : 1350...1380
4th rack travel in: 1515
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 7.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 7.40...7.60
Rack travel in mm : 2.00
Speed rpm : 640...700

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 12.30...12.40
2nd speed rpm : 650
Rack travel in m: 13.10...13.20
3rd speed rpm : 925
Rack travel in m: 12.80...13.00

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 13.10...13.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.30...12.40
2nd pressure hPa : 145
Rack travel in m: 12.60...12.70
3rd pressure hPa : 80
Rack travel in m: 12.20...12.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 650
Del.quantity cm³/ : 79.0...81.0
1000 s: (76.5...83.5)
Speed rpm : 1000
Del.quantity cm³/ : 83.0...85.0
1000 s: (80.5...87.5)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm³/ : 67.0...68.0
1000 s: (65.0...70.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.30
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...110.0
1000 s: (97.0...113.0)
Rack travel in mm : 17.30...17.70

Remarks:

: DX7.10

When adjusting and checking, adjust
speed regulation to 1210...1220 l/min.
Afterwards, readjust speed regulation
to 1160...1170 l/min.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 19,1 o
Edition : 11.03.88
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 401 840 105

Injection pump
Pump designation : PE12P110A320LS855
EP type number : 0 411 810 046
Governor
Governor design. : RQV350...1150PA476
Governor no. : 0 421 813 227

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 404 A

1st version kW : 368.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 150...170

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.35)
Rack travel in mm : 9.00...12.00
Firing order : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
 180-225-240-285-300-

Phasing : 345
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 1130

Rack travel in mm : 11.80...11.90

Del. quantity cm³/ : 13.4...13.6

100 s: (13.1...13.8)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 350.0

Rack travel in mm : 6.8...7.1

Del. quantity cm³/ : 1.4...2.0

100 s: (1.1...2.2)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1130

Aneroid pressure h: 700

Del. quantity : 134.0...136.0

1000 : (131.5...138.5)

Spread cm³ : 4.00

1000 : (8.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 10.80

Speed rpm : 1185...1195
2nd rack travel in: 4.00
Speed rpm : 1275...1305
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 14...22

Testing:

Speed rpm : 100
Minimum rack travel: 8.50
Speed rpm : 350
Rack travel in mm : 6.80...7.10
Rack travel in mm : 2.00
Speed rpm : 580...640

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1130
Rack travel in m: 11.80...11.90
2nd speed rpm : 700
Rack travel in m: 12.40...12.50
3rd speed rpm : 970
Rack travel in m: 12.00...12.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : -
Contr.-rod trav.mm: 11.60...11.90

Measurement

Speed 1/min : 500

1st pressure hPa : 350
Rack travel in m: 11.90...12.00

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 700
Del.quantity cm³/ : 135.0...139.0
1000 s: (132.0...142.0)
Spread cm³ : 6.00
1000 s: (9.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 121.0...123.0
1000 s: (118.5...125.5)
Spread cm³ : 6.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.80
Speed rpm : 1185...1195

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 21,9 d
 Edition : 05.02.88
 Replaces : 11.85
 Test oil : ISO-4113

Combination no. : 0 401 840 713

Injection pump
 Pump designation : PE12P120A320LS3819-2
 EP type number : 0 411 820 705
 Governor
 Governor design. : RQ300/1050PA656
 Governor no. : 0 421 801 190

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM424LA

1st version kW : 441,0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 150...170

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
 180-225-240-285-300-
 345

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 18.2...18.4

100 s: (17.9...18.7)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300,0

Rack travel in mm : 5.5...5.7

Del. quantity cm³/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2

Speed rpm : 600

Rack travel in mm : 19.10...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Aneroid pressure h: 800

Del. quantity : 182.0...184.0

1000 : (179.0...187.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600
Rack travel in mm : 19.9

Testing:

1st rack travel in: 11.00
Speed rpm : 1085...1095
2nd rack travel in: 4.00
Speed rpm : 1165...1195
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.6

Testing:

Speed rpm : 200
Minimum rack trave: 7.00
Speed rpm : 300
Rack travel in mm : 5.50...5.70
Rack travel in mm : 2.00
Speed rpm : 360...400

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : -
Contr.-rod trav.mm: 10.70...10.80

Measurement

Speed 1/min : 500

1st pressure hPa : 490
Rack travel in m: 11.20...11.40
2nd pressure hPa : 590
Rack travel in m: 12.00...12.20

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 141.0...143.0
1000 s: (138.0...146.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1085...1095

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...190.0
1000 s: (166.0...194.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 a 1
Edition : 11.03.88
Replaces : 5.85
Test oil : ISO-4113

Combination no. : 0 401 846 194

Injection pump
Pump designation : PE6P100A720RS15
EP type number : 0 411 806 106
Governor
Governor design. : RQ250/1100PA111DR
Governor no. : 0 421 803 045

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 355

1st version kW : 154.5
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1090

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 10.0...10.2

100 s: (9.8...10.4)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.9...8.1

Del. quantity cm³/ : 1.7...2.3

100 s: (1.4...2.5)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.50...16.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1090

Del. quantity : 100.0...102.0

1000 : (98.0...104.0)

Spread cm³ : 3.00

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 11.00

Speed rpm : 1135...1150

2nd rack travel in: 4.00

Speed rpm : 1210...1240

4th rack travel in: 1300

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack travel: 7.00

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 385...425

TORQUE CONTROL

Dimension a mm : ?

Torque control curve - 1st version

1st speed rpm : 1090

Rack travel in m: 12.00...12.10

2nd speed rpm : 450

Rack travel in m: 12.60...12.70

3rd speed rpm : 700

Rack travel in m: 12.30...12.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700

Del. quantity cm³/ : 96.0...99.0

1000 s: (94.0...101.0)

Speed rpm : 450

Del. quantity cm³/ : 90.0...94.0

1000 s: (88.0...96.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00

Speed rpm : 1135...1150

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 150.0...170.0

1000 s: (146.0...174.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : BET 8,8 b 1
Edition : 12.02.88
Replaces : 18.12.87
Test oil : ISO-4113

Combination no. : 0 401 846 489

Injection pump
Pump designation : PE6P120A32ORS377
EP type number : 0 411 826 108
Governor
Governor design. : RQV275...1200PA425-2
Governor no. : 0 421 813 403

Customer-spec. information
Customer : RVI

Engine : MIDS 062030

1st version kW : 158.1
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 12.60...12.70

Del. quantity cm³/ : 15.0...15.2

100 s : (14.7...15.5)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 7.0...7.2

Del. quantity cm³/ : 1.1...1.7

100 s : (0.8...2.0)

Spread cm³ : 0.8

100 s : (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 275
travel mm : 1.00...1.20

2nd speed rpm : 425
travel mm : 3.00...3.50

3rd speed rpm : 900
travel mm : 5.60...5.90

4th speed rpm : 1200
travel mm : 7.60...7.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Aneroid pressure h: 700

Del. quantity : 150.0...152.0

1000 : (147.0...155.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 60...68

Testing:
1st rack travel in: 11.60
Speed rpm : 1245...1255
2nd rack travel in: 4.00
Speed rpm : 1375...1405
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 6...14

Testing:
Speed rpm : 200
Minimum rack travel: 8.10
Speed rpm : 275
Rack travel in mm : 5.40...5.60

CONSTANT REGULATION
Speed rpm : 275...375

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 12.60...12.70

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.10...11.20
2nd pressure hPa : 190
Rack travel in m: 12.20...12.30
3rd pressure hPa : 160
Rack travel in m: 11.50...11.70

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 76.0...78.0
1000 s: (73.0...81.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: -1.00
Speed rpm : 1245...1255

LOW IDLE

Speed rpm : 275
Rack travel in mm : 5.40...5.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.0...20.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks: :

APPLICATION
Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 13,8 a5
Edition : 07.03.88
Replaces : 11.12.87
Test oil : ISO-4113

Combination no. : 0 401 846 496

Injection pump
Pump designation : PE6P120A72ORS167
EP type number : 0 411 826 053
Governor
Governor design. : RQ225/1100PA703
Governor no. : 0 421 801 250

Customer-spec. information
Customer : IVECO-FIAT

Engine : 8210.02

1st version kW : 184.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.10...11.20

Del. quantity cm³/ : 17.0...17.3

100 s : (16.7...17.6)

Spread cm³ : 0.5

100 s : (0.8)

2nd speed rpm : 225.0

Rack travel in mm : 7.4...7.8

Del. quantity cm³/ : 1.7...2.3

100 s : (1.4...2.6)

Spread cm³ : 0.8

100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 170.0...173.0

1000 : (167.0...176.0)

Spread cm³ : 5.00

1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in : 10.10

Speed rpm : 1145...1160

2nd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 225
Rack travel in mm : 6.5

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 225
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 340...380

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.10...11.20
2nd speed rpm : 550
Rack travel in m: 11.10...11.30

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.10
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 b 4
 Edition : 11.03.88
 Replaces : 15.1.88
 Test oil : ISO-4113
 Combination no. : 0 401 846 497
 Injection pump
 Pump designation : PE6P120A32ORS438-1
 EP type number : 0 411 826 133
 Governor
 Governor design. : RQV275...1200PA648-2
 Governor no. : 0 421 813 490

Customer-spec. information

Customer : RVI
 Engine : MIDS062030
 1st version kW : 150.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 019
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,8
 Test lines : 1 680 750 067
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

 Rack travel in mm : 10.20...10.30

 Del. quantity cm³/ : 13.3...13.5

 100 s: (13.0...13.8)

 Spread cm³ : 0.5

 100 s: (0.9)

 2nd speed rpm : 275.0
 Rack travel in mm : 4.3...4.5
 Del. quantity cm³/ : 1.5...2.1
 100 s: (1.2...2.4)
 Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 275
 travel mm : 1.20...1.40
 2nd speed rpm : 450
 travel mm : 3.30...4.00
 3rd speed rpm : 850
 travel mm : 5.90...6.20
 4th speed rpm : 1200
 travel mm : 8.20...8.40

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1200
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1200
 Del. quantity : 133.0...135.0
 1000 : (130.0...138.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:

1st rack travel in: 9.20
Speed rpm : 1255...1265
2nd rack travel in: 3.90
Speed rpm : 1355...1385
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 200
Minimum rack travel: 8.10
Speed rpm : 275
Rack travel in mm : 5.70...5.90

CONSTANT REGULATION

Speed rpm : 275...360

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del. quantity cm³/ : 116.0...122.0
1000 s: (113.0...125.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1255...1265

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 105.0...125.0
1000 s: (101.0...129.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 5.70...5.90

Remarks:

:
Start-of-delivery mark at the "INJ"
marking

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 8,8 I
Edition : 11.03.88
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 401 846 499

Injection pump
Pump designation : PE6P12QA32ORS474
EP type number : 0 411 826 134
Governor
Governor design. : RQV275...1200PA425-3
Governor no. : 0 421 813 441

Customer-spec. information
Customer : RVI

Engine : MIDS062030

1st version kW : 168.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 11.90...12.00

Del. quantity cm³/ : 15.1...15.3

100 s: (14.8...15.6)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 275.0
Rack travel in mm : 6.0...6.2
Del. quantity cm³/ : 1.5...2.1
100 s: (1.2...2.4)

Spread cm³ : 0.8
100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 275
travel mm : 1.20...1.40
2nd speed rpm : 400
travel mm : 2.90...3.40
3rd speed rpm : 900
travel mm : 5.80...6.00
4th speed rpm : 1200
travel mm : 7.80...8.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1250
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1200
Aneroid pressure h: 700
Del. quantity : 151.0...153.0
1000 : (148.0...156.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 62...70

Testing:

1st rack travel in: 10.90
Speed rpm : 1265...1275
2nd rack travel in: 4.00
Speed rpm : 1380...1410
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 200
Minimum rack travel: 8.40
Speed rpm : 275
Rack travel in mm : 5.70...5.90

CONSTANT REGULATION

Speed rpm : 275...360

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 700
Contr.-rod trav.mm: 11.90...12.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.70...10.80
2nd pressure hPa : 195
Rack travel in m: 11.60...11.70
3rd pressure hPa : 175
Rack travel in m: 11.10...11.30

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 750

Del.quantity cm³/ : 139.0...145.0
1000 s: (136.0...148.0)

Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm³/ : 94.0...96.0
1000 s: (91.0...99.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.90
Speed rpm : 1265...1275

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 105.0...125.0
1000 s: (101.0...129.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 5.70...5.90

Remarks:

:

Start-of-delivery mark at the "INJ"
marking

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,6 y4
 Edition : 11.03.88
 Replaces : 12.9.86
 Test oil : ISO-4113

Combination no. : 0 401 846 521

Injection pump
 Pump designation : PE6P120A32ORS415-1
 EP type number : 0 411 826 123
 Governor
 Governor design. : RQ250/1100PA417-5
 Governor no. : 0 421 801 317

Customer-spec. information
 Customer : DAF

Engine : DKV 1160

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 11.00...11.10

Del. quantity cm³/ : 16.7...16.9

100 s : (16.4...17.2)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.5...6.7

Del. quantity cm³/ : 1.4...2.0

100 s : (1.1...2.3)

Spread cm³ : 0.8

100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 700

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 650

Aneroid pressure h : 700

Del. quantity : 167.0...169.0

1000 : (164.0...172.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 700

Rack travel in mm : 15.8

Testing:

1st rack travel in : 8.90

Speed rpm : 1130...1145

2nd rack travel in : 4.00

Speed rpm : 1180...1210

4th rack travel in : 1300

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.3

Testing:

Speed rpm : 100

Minimum rack trave: 7.20

Speed rpm : 250

Rack travel in mm : 6.20...6.40

Rack travel in mm : 2.00

Speed rpm : 440...480

TORQUE CONTROL

Dimension a mm : 0.77

Torque control curve - 1st version

1st speed rpm : 650

Rack travel in m: 11.20...11.30

2nd speed rpm : 1090

Rack travel in m: 9.90...10.10

3rd speed rpm : 825

Rack travel in m: 10.70...10.90

4th speed rpm : 900

Rack travel in m: 10.30...10.60

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 600

Rack travel in mm : 700

Contr.-rod trav.mm: 11.00...11.10

Measurement

Speed 1/min : 600

1st pressure hPa : -

Rack travel in m: 9.80...10.00

2nd pressure hPa : 290

Rack travel in m: 10.70...10.90

3rd pressure hPa : 260

Rack travel in m: 10.20...10.50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700

Speed rpm : 1090

Del.quantity cm3/ : 153.0...157.0

1000 s: (150.0...160.0)

Aneroid pressure h: -

Speed rpm : 600

Del.quantity cm3/ : 135.0...137.0

1000 s: (132.0...140.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.90

Speed rpm : 1130...1145

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 320.0...360.0

1000 s: (320.0...360.0)

Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250

Rack travel in mm : 6.20...6.40

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 s
Edition : 19.02.88
Replaces : 7.1.88
Test oil : ISO-4113

Combination no. : 0 401 846 529

Injection pump
Pump designation : PE6P120A32ORS3186
EP type number : 0 411 826 756
Governor
Governor design. : RQV250..1025PA657-13
Governor no. : 0 421 813 592

Customer-spec. information
Customer : VOLVO

Engine : TD102F

1st version kW : 220.0
Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.40...11.50

Del. quantity cm³/ : 19.7...19.9

100 s : (19.4...20.2)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 3.9...4.1

Del. quantity cm³/ : 1.7...2.2

100 s : (1.4...2.4)

Spread cm³ : 0.5

100 s : (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.20...1.30

2nd speed rpm : 430

travel mm : 3.50...3.80

3rd speed rpm : 700

travel mm : 6.40...6.60

4th speed rpm : 900

travel mm : 6.40...6.60

5th speed rpm : 1080

travel mm : 8.30...8.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1080

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1000

Del. quantity : 197.0...199.0
1000 : (194.0...202.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 58...66

Testing:

1st rack travel in: 10.40
Speed rpm : 1055...1065
2nd rack travel in: 4.00
Speed rpm : 1110...1140
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 61...69

Testing:

Speed rpm : 100
Minimum rack trave: 5.40
Speed rpm : 250
Rack travel in mm : 3.90...4.10

CONSTANT REGULATION

Speed rpm : 250...350

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 11.40...11.50

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.80...9.00
2nd pressure hPa : 80
Rack travel in m: 9.00...9.10
3rd pressure hPa : 400
Rack travel in m: 10.90...11.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del. quantity cm³/ : 143.0...145.0
1000 s: (140.0...148.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 1055...1065

LOW IDLE

Speed rpm : 250
Rack travel in mm : 3.90...4.10
Del. quantity cm³/ : 17.0...22.0
1000 s: (14.5...24.5)
Spread cm³ : 5.00
1000 s: (7.00)

Remarks:

:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 c
Edition : 12.02.88
Replaces : 22.1.88
Test oil : ISO-4113

Combination no. : 0 401 846 547

Injection pump
Pump designation : PE6P110A820LS513
EP type number : 0 411 816 174
Governor
Governor design. : RQV250...1000PA811
Governor no. : 0 421 813 556

Customer-spec. information
Customer : ENASA

Engine : 95 R1 AX

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
: (3.15...3.25)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 12.80...12.90

Del. quantity cm³/ : 17.6...17.8

100 s: (17.3...18.1)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...6.8

Del. quantity cm³/ : 1.8...2.3

100 s: (1.5...2.5)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.00...1.40

2nd speed rpm : 400

travel mm : 2.20...2.80

3rd speed rpm : 650

travel mm : 4.50...5.10

4th speed rpm : 1050

travel mm : 8.50...8.70

5th speed rpm : 1140

travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1040

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Aneroid pressure h: 900

Del. quantity : 176.0...178.0

1000 : (173.0...181.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever
position degrees: 41...49

Testing:

1st rack travel in: 11.80
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 9...17

Testing:

Speed rpm : 100
Minimum rack travel: 8.20
Speed rpm : 250
Rack travel in mm : 6.60...6.80

CONSTANT REGULATION

Speed rpm : 250...380

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 12.80...12.90
2nd speed rpm : 600
Rack travel in m: 13.10...13.30

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 13.10...13.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.90...11.20
2nd pressure hPa : 440
Rack travel in m: 12.50...12.60
3rd pressure hPa : 290
Rack travel in m: 11.50...11.70

START CUT-OUT

Speed 1/min : 170 (150)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900

Speed rpm : 600
Del.quantity cm3/ : 178.0...182.0
1000 s: (175.0...185.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 131.0...135.0
1000 s: (128.0...138.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.80
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:

:

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 d
Edition : 12.02.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 549

Injection pump
Pump designation : PE6P100AB20LS503
EP type number : 0 411 806 197
Governor
Governor design. : RQV250...1000PA811
Governor no. : 0 421 813 556

Customer-spec. information
Customer : ENASA

Engine : 95 T1 AX,BX

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 980

Rack travel in mm : 14.20...14.30

Del. quantity cm³/ : 16.5...16.7

100 s : (16.3...16.9)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0
Rack travel in mm : 7.7...7.9
Del. quantity cm³/ : 1.8...2.2
100 s : (1.5...2.4)
Spread cm³ : 0.3
100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1040
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 980
Aneroid pressure h: 900
Del. quantity : 165.0...167.0
1000 : (163.0...169.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 42...50

Testing:
1st rack travel in: 13.20
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 9...17

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION

Speed rpm : 250...350

TORQUE CONTROL

Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 980
Rack travel in m: 14.20...14.30
2nd speed rpm : 700
Rack travel in m: 14.50...14.70
3rd speed rpm : 850
Rack travel in m: 14.30...14.50

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 14.50...14.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 13.00...13.30
2nd pressure hPa : 400
Rack travel in m: 14.10...14.20
3rd pressure hPa : 300
Rack travel in m: 13.40...13.60

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 700
Del.quantity cm3/ : 163.5...167.5
1000 s: (161.5...169.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 129.0...133.0
1000 s: (127.0...135.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.20
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 180.0...200.0
1000 s: (176.0...204.0)

Remarks:

:

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 f
Edition : 12.02.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 551

Injection pump
Pump designation : PE6P110A32ORS263-1
EP type number : 0 411 816 175
Governor
Governor design. : RQ250/1000PA218-2
Governor no. : 0 421 801 411

Customer-spec. information
Customer : ENASA

Engine : 96 T4 AY

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 11.40...11.50

Del. quantity cm³/ : 16.0...16.2

100 s : (15.7...16.5)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 250.0
Rack travel in mm : 5.9...6.1
Del. quantity cm³/ : 1.7...2.3
100 s : (1.4...2.6)
Spread cm³ : 0.4
100 s : (0.7)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 600
Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 900
Del. quantity : 160.0...162.0
1000 : (157.0...165.0)
Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Setting point:
Speed rpm : 600
Rack travel in mm : 16.0

Testing:
1st rack travel in: 10.40
Speed rpm : 1045...1060
2nd rack travel in: 4.00
Speed rpm : 1110...1140
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 350...390

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.40

Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 143.0...163.0

1000 s: (139.0...167.0)

Remarks:

:

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 e
Edition : 11.03.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 552

Injection pump
Pump designation : PE6P100A82OLS503-1
EP type number : 0 411 806 198
Governor
Governor design. : RQ250/1000PA352-1
Governor no. : 0 421 801 412

Customer-spec. information

Customer : ENASA

Engine : 95 T1 AZ,CZ

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.85...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 980

Rack travel in mm : 14.20...14.30

Del. quantity cm³/ : 16.5...16.7

100 s : (16.3...16.9)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.8...8.0

Del. quantity cm³/ : 1.8...2.2

100 s : (1.5...2.4)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 980

Aneroid pressure h : 900

Del. quantity : 165.0...167.0

1000 : (163.0...169.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 13.20

Speed rpm : 1045...1060

2nd rack travel in: 4.00

Speed rpm : 1100...1130

4th rack travel in: 1200

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 14.20...14.30
2nd speed rpm : 700
Rack travel in m: 14.60...14.90

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 14.60...14.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 13.00...13.30
2nd pressure hPa : 400
Rack travel in m: 14.10...14.20
3rd pressure hPa : 300
Rack travel in m: 13.40...13.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 700
Del.quantity cm3/ : 169.0...172.0
1000 s: (166.5...174.5)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 129.0...133.0
1000 s: (127.0...135.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.20
Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 250.0...265.0
1000 s: (246.0...269.0)
Rack travel in mm : 19.50...21.00

Remarks:

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 c 1
Edition : 19.02.88
Replaces : 22.10.86
Test oil : ISC-4113

Combination no. : 0 401 846 749

Injection pump
Pump designation : PE6P110A32QLS380S-10
EP type number : 0 411 816 740
Governor
Governor design. : RQ300/1150PA187-6
Governor no. : 0 421 801 155

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 159.0
Rated speed : 2300
2nd version kW : 159.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

K01

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285
Phasing :
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 11.70...11.80

Del. quantity cm³/ : 13.3...13.5

100 s: (13.0...13.7)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 7.8...8.0

Del. quantity cm³/ : 1.2...1.8

100 s: (0.9...2.0)

Spread cm³ : 0.4

100 s: (0.7)

1st speed rpm : 1150

Rack travel in mm : 12.5...12.6

Del. quantity cm³/ : 12.8...13.0*

100 s: (12.5...13.3

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 300

Rack travel in mm : 8.30...8.50

Del. quantity cm³/ : 1.2...1.8 *

100 s: (-)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.20...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 133.0...135.0
1000 : (130.5...137.5)
Spread cm3 : 4.00
1000 : (8.00)

2nd version
Speed rpm : 1150
Del.quantity cm3/ : 128.0...130.0
1000 s : (125.0...133.0)
Spread cm3 : 4.0
1000 s : (8.0)

RATED SPEED

1st version

Setting point:
Speed rpm : 650
Rack travel in mm : 13.6

Testing:
1st rack travel in: 10.70
Speed rpm : 1195...1210
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1350
Speed rpm : 0.00...1.50

2nd version

Setting point:
Speed rpm : 650
Rack travel in mm : 13.6

Testing:
1st rack travel in: 10.70
Speed rpm : 1195...1210
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1350
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.9

Testing:
Speed rpm : 100
Minimum rack travel: 9.50
Speed rpm : 300
Rack travel in mm : 7.80...8.00
Rack travel in mm : 2.00
Speed rpm : 410...440

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600

Del.quantity cm3/ : 112.0...116.0
1000 s : (109.0...119.0)
Spread cm3 : 6.00
1000 s : (9.0)

2nd version
Speed rpm : 600
Del.quantity cm3/ : 120.0...124.0
1000 s : (117.0...127.0)
Spread cm3 : 6.0
1000 s : (9.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.70
Speed rpm : 1195...1210

2nd version
1mm rack travel less than
full load rack tr: 11.50
Speed rpm : 1195...1210

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s : (126.0...154.0)

Remarks:
See VDT-I-401/102.
Version 1: Without return-flow
restriction
Version 2: With return-flow restriction
* Version 2

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 Q3
Edition : 22.01.88
Replaces : 5.85
Test oil : ISO-4113
Combination no. : 0 401 846 781
Injection pump
Pump designation : PE6P110A32ORS3108
EP type number : 0 411 816 727
Governor
Governor design. : RQV325...1100PA232-1
Governor no. : 0 421 813 409

Customer-spec. information
Customer : VOLVO-BM

Engine : EM/TD100G

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Test nozzle holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
Test lines : 1 680 750 015
Outside diameter
x wall thickness
x Length mm : 6,00X1,50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
Prestroke mm : 3,00...3,10
 : (2,95...3,15)
Rack travel in mm : 9,00...12,00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.50...11.60

Del. quantity cm³/ : 14.7...14.9

100 s: (14.4...15.2)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 325.0
Rack travel in mm : 4.0...4.2
Del. quantity cm³/ : 1.7...2.1
100 s: (1.4...2.3)
Spread cm³ : 0.3
100 s: (0.6)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325
travel mm : 1.50...1.90
2nd speed rpm : 450
travel mm : 2.40...3.00
3rd speed rpm : 700
travel mm : 4.30...4.90
4th speed rpm : 1160
travel mm : 8.60...8.80
5th speed rpm : 1240
travel mm : 9.50...9.90

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1160
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Aneroid pressure h: 900
Del. quantity : 147.0...149.0
1000 : (144.0...152.0)
Spread cm³ : 4.00
1000 : (8.00)

RATED SPEED

1st version
Control lever
position degrees: 42...50

Testing:
1st rack travel in: 10.50
Speed rpm : 1160...1170
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 9...17

Testing:
Speed rpm : 100
Minimum rack travel: 5.60
Speed rpm : 325
Rack travel in mm : 4.00...4.20

CONSTANT REGULATION
Speed rpm : 325...425

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 11.50...11.60

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.60...9.80
2nd pressure hPa : 290
Rack travel in m: 9.90...10.00
3rd pressure hPa : 510
Rack travel in m: 11.30...11.40

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 1000
Del.quantity cm3/ : 138.0...142.0
1000 s: (135.0...145.0)
Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm3/ : 106.5...109.5
1000 s: (104.0...112.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.50
Speed rpm : 1160...1170

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 325
Rack travel in mm : 4.00...4.20
Del.quantity cm3/ : 17.0...21.0
1000 s: (14.5...23.5)
Spread cm3 : 3.00
1000 s: (6.00)

Remarks:

:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SCA 9,0 E 2
 Edition : 02.11.87
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 803
 Injection pump
 Pump designation : PE6P120A32ORS3141
 EP type number : 0 411 826 744
 Governor
 Governor design. : RQV200...1100PA729
 Governor no. : 0 421 813 469

Customer-spec. information
 Customer : SAAB-SCANIA

Engine : DN 901

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY
 Test pressure, bar : 25...27

Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Rack travel in mm : 9.00...12.00

K05

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 9.30...9.40

Del. quantity cm³/ : 11.7...11.9

100 s : (11.4...12.2)

Spread cm³ : 0.5

100 s : (0.8)

2nd speed rpm : 225.0

Rack travel in mm : 5.4...5.6

Del. quantity cm³/ : 1.5...1.9

Spread cm³ : 0.3

100 s : (0.6)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 225
 travel mm : 0.90...1.00

2nd speed rpm : 350
 travel mm : 2.60...2.90

3rd speed rpm : 550
 travel mm : 4.90...5.20

4th speed rpm : 1140
 travel mm : 8.60...8.80

5th speed rpm : 1230
 travel mm : 9.20...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1120

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 117.0...119.0

1000 : (114.0...122.0)

Spread cm³ : 5.00

1000 : (8.00)

RATED SPEED

1st version

Control lever

position degrees: 56...64

Testing:

1st rack travel in: 8.30

Speed rpm : 1140...1150

2nd rack travel in: 4.00

Speed rpm : 1210...1240

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 5...13

Testing:

Speed rpm : 100

Minimum rack travel: 6.20

Speed rpm : 225

Rack travel in mm : 4.70...4.90

Rack travel in mm : 2.00

Speed rpm : 300...360

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100

Del. quantity cm³/ : 124.0...132.0

1000 s: (122.0...134.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30

Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 290.0...340.0

Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 225

Rack travel in mm : 4.70...4.90

Remarks:

:

Delivery-valve spring pre-tension

3.2...3.4 mm.

K06

Permissible alteration of 3.0...3.5 mm
ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
1987-01-08

Engine start of delivery: 18^o BTDC

Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 12,2 A
Edition : 07.01.88
Replaces : 20.11.87
Test oil : ISO-4113

Combination no. : 0 401 846 827

Injection pump
Pump designation : PE6P120A32ORS3178
EP type number : 0 411 826 752
Governor
Governor design. : RQV250...950PA657-11
Governor no. : 0 421 813 568

Customer-spec. information
Customer : VOLVO

Engine : TD122F

1st version kW : 257.0
Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.00...13.10

Del. quantity cm³/ : 22.9...23.1

100 s : (22.6...23.4)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 4.6...4.8

Del. quantity cm³/ : 1.7...2.2

100 s : (1.4...2.5)

Spread cm³ : 0.5

100 s : (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.40

2nd speed rpm : 450
travel mm : 3.60...4.20

3rd speed rpm : 700
travel mm : 6.40...6.60

4th speed rpm : 985
travel mm : 8.20...8.40

5th speed rpm : 1060
travel mm : 9.60...10.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1000

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 900

Del. quantity : 229.0...231.0
1000 : (226.0...234.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 60...68

Testing:
1st rack travel in: 12.00
Speed rpm : 980...990
2nd rack travel in: 4.00
Speed rpm : 1060...1090
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 5...13

Testing:
Speed rpm : 100
Minimum rack travel: 6.20
Speed rpm : 250
Rack travel in mm : 4.60...4.80

CONSTANT REGULATION

Speed rpm : 250...380

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav. mm: 13.00...13.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.80...10.00
2nd pressure hPa : 100
Rack travel in m: 10.20...10.30
3rd pressure hPa : 640
Rack travel in m: 12.70...12.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del. quantity cm³/ : 163.0...165.0
1000 s: (160.0...168.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 980...990

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 220.0...260.0
1000 s: (216.0...264.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.60...4.80
Del. quantity cm³/ : 17.5...22.5
1000 s: (14.5...25.5)
Spread cm³ : 5.00
1000 s: (7.00)

Remarks:

:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 S 2
Edition : 15.01.88
Replaces : 16.10.87
Test oil : ISO-4113

Combination no. : 0 401 846 829

Injection pump
Pump designation : PE6P110A320LS3835
EP type number : 0 411 816 749
Governor
Governor design. : RQ300/950PA827-1K
Governor no. : 0 421 803 093

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 150.0
Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 950

Rack travel in mm : 13.10...13.20

Del. quantity cm³/ : 12.6...12.8

100 s: (12.3...13.0)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 300.0
Rack travel in mm : 8.8...9.0
Del. quantity cm³/ : 1.5...2.1
100 s: (1.2...2.3)
Spread cm³ : 0.4
100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.60...1.80
2nd speed rpm : 500
travel mm : 5.50...5.70
3rd speed rpm : 775
travel mm : 6.50...6.80
4th speed rpm : 950
travel mm : 7.50...7.80
5th speed rpm : 1100
travel mm : 9.50...10.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -2
Speed rpm : 600
Rack travel in mm : 14.70...15.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 950

Del. quantity : 126.0...128.0
1000 : (123.5...130.5)
Spread cm3 : 4.00
1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600
Rack travel in mm : 15.2

Testing:

1st rack travel in: 12.10
Speed rpm : 995...1010
2nd rack travel in: 4.00
Speed rpm : 1050...1080
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 8.8

Testing:

Speed rpm : 200
Minimum rack trave: 10.50
Speed rpm : 300
Rack travel in mm : 8.80...8.90
Rack travel in mm : 2.00
Speed rpm : 450...490
Speed rpm : 550
Maximum rack trave: 1.80

TORQUE CONTROL

Dimension a mm : 2.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del. quantity cm3/ : 117.0...120.0
1000 s: (114.0...123.0)
Spread cm3 : 6.00
1000 s: (9.00)
Speed rpm : 750
Del. quantity cm3/ : 120.0...124.0
1000 s: (117.0...127.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.10
Speed rpm : 995...1010

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 120.0...140.0
1000 s: (116.0...144.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 s2
 Edition : 07.03.88
 Replaces : 12.11.87
 Test oil : ISO-4113
 Combination no. : 0 401 846 836
 Injection pump
 Pump designation : PE6P120A32ORS3186-1
 EP type number : 0 411 826 774
 Governor
 Governor design. : RQV250..1100PA657-14
 Govenrer no. : 0 421 813 682

Customer-spec. information
 Customer : VOLVO

Engine : TD102FDQ

1st version KW : 232.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.40...11.50

Del. quantity cm³/ : 19.7...19.9

100 s: (19.4...20.2)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 4.2...4.4

Del. quantity cm³/ : 1.7...2.2

100 s: (1.4...2.4)

Spread cm³ : 0.5

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.40

2nd speed rpm : 350
 travel mm : 2.20...2.80

3rd speed rpm : 700
 travel mm : 6.40...6.60

4th speed rpm : 1135
 travel mm : 7.70...7.90

5th speed rpm : 1210
 travel mm : 8.90...9.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1170

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1000

Del. quantity : 197.0...199.0
1000 : (194.0...202.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 56...64

Testing:

1st rack travel in: 10.40
Speed rpm : 1130...1140
2nd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 4...12

Testing:

Speed rpm : 100
Minimum rack travel: 5.70
Speed rpm : 250
Rack travel in mm : 4.20...4.40

CONSTANT REGULATION

Speed rpm : 250...360

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav. mm: 11.40...11.50

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.70...8.90
2nd pressure hPa : 80
Rack travel in m: 9.00...9.10
3rd pressure hPa : 400
Rack travel in m: 11.00...11.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del. quantity cm³/ : 143.0...145.0
1000 s: (140.0...148.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 1130...1140

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 260.0...310.0
1000 s: (256.0...314.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.20...4.40
Del. quantity cm³/ : 17.0...22.0
1000 s: (14.5...24.5)
Spread cm³ : 5.00
1000 s: (7.00)

Remarks:

:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 U
 Edition : 07.01.88
 Replaces : 12.6.87
 Test oil : ISO-4113

Combination no. : 0 401 846 850

Injection pump
 Pump designation : PE6P110A32ORS3197
 EP type number : 0 411 816 752
 Governor
 Governor design. : RQV300...1100PA232-3
 Governor no. : 0 421 813 639

Customer-spec. information
 Customer : VOLVO-BM

Engine : TD102

1st version kW : 196.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.80...10.90

Del. quantity cm³/ : 14.7...14.9

100 s : (14.4...15.2)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 3.9...4.1

Del. quantity cm³/ : 1.6...2.0

100 s : (1.3...2.2)

Spread cm³ : 0.3

100 s : (0.6)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.40...1.60

2nd speed rpm : 350
 travel mm : 1.70...2.30

3rd speed rpm : 700
 travel mm : 4.40...5.00

4th speed rpm : 1165
 travel mm : 8.70...8.90

5th speed rpm : 1255
 travel mm : 9.60...10.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h : 900

Del. quantity : 147.0...149.0

1000 : (144.0...152.0)

Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 43...51

Testing:
1st rack travel in: 9.80
Speed rpm : 1160...1170
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 9...17

Testing:
Speed rpm : 100
Minimum rack travel: 5.50
Speed rpm : 300
Rack travel in mm : 3.90...4.10

CONSTANT REGULATION
Speed rpm : 300...400

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 10.80...10.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.40...9.60
2nd pressure hPa : 280
Rack travel in m: 10.60...10.70
3rd pressure hPa : 180
Rack travel in m: 9.80...10.00

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 1000
Del.quantity cm³/ : 130.5...134.5
1000 s: (127.5...135.5)
Aneroid pressure h: -
Speed rpm : 700

Del.quantity cm³/ : 118.5...121.5
1000 s: (116.0...124.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.80
Speed rpm : 1160...1170

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 3.90...4.10
Del.quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 3.00
1000 s: (6.00)

Remarks:

APPLICATION
Loading machine

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 V1
Edition : 11.12.87
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 846 856
Injection pump
Pump designation : PE6P110A320RS3080-2
EP type number : 0 411 816 750
Governor
Governor design. : RQV250...1050PA657-15
Governor no. : 0 421 813 652
Customer-spec. information
Customer : VOLVO

Engine : TD102FEQ

1st version kW : 191.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.00...3.10
: (2.95...3.15)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.50...12.60

Del. quantity cm³/ : 16.2...16.4

100 s: (15.9...16.7)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 3.8...4.0

Del. quantity cm³/ : 1.5...1.9

100 s: (1.2...2.1)

Spread cm³ : 0.3

100 s: (0.6)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.40

2nd speed rpm : 350
travel mm : 2.20...2.80

3rd speed rpm : 750
travel mm : 6.30...6.70

4th speed rpm : 1085
travel mm : 7.80...8.00

5th speed rpm : 1160
travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1120

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 900

Del. quantity : 162.0...164.0

1000 : (159.0...167.0)

Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 58...66

Testing:

1st rack travel in: 11.50
Speed rpm : 1080...1090
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 4...12

Testing:

Speed rpm : 100
Minimum rack travel: 5.30
Speed rpm : 250
Rack travel in mm : 3.80...4.00

CONSTANT REGULATION

Speed rpm : 250...360

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav. mm: 12.50...12.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.80...11.00
2nd pressure hPa : 110
Rack travel in m: 11.10...11.20
3rd pressure hPa : 320
Rack travel in m: 12.20...12.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del. quantity cm³/ : 132.0...135.0
1000 s: (129.5...137.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1080...1090

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 160.0...190.0
1000 s: (156.0...194.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 3.80...4.00
Del. quantity cm³/ : 15.0...19.0
1000 s: (12.5...21.5)
Spread cm³ : 3.00
1000 s: (6.00)

Remarks:

:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 V2
 Edition : 11.12.87
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 846 857

Injection pump
 Pump designation : PE6P110A320RS3080-1
 EP type number : 0 411 816 734
 Governor
 Governor design. : RQV250....950PA657-16
 Governor no. : 0 421 813 655

Customer-spec. information
 Customer : VOLVO

Engine : TD102FBQ

1st version kW : 228.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)

K17

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

 Rack travel in mm : 14.30...14.40

 Del. quantity cm³/ : 19.9...20.1

 100 s : (19.6...20.4)

 Spread cm³ : 0.4

 100 s : (0.7)

 2nd speed rpm : 250.0
 Rack travel in mm : 3.8...4.0
 Del. quantity cm³/ : 1.5...1.9
 100 s : (1.2...2.1)
 Spread cm³ : 0.3
 100 s : (0.6)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.40
 2nd speed rpm : 350
 travel mm : 2.20...2.80
 3rd speed rpm : 750
 travel mm : 6.30...6.70
 4th speed rpm : 985
 travel mm : 8.20...8.40
 5th speed rpm : 1060
 travel mm : 9.10...9.50

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 985
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Aneroid pressure h : 900
 Del. quantity : 199.0...201.0
 1000 : (196.0...204.0)

Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:

1st rack travel in: 13.30
Speed rpm : 980...990
2nd rack travel in: 4.00
Speed rpm : 1050...1080
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 4...12

Testing:

Speed rpm : 100
Minimum rack travel: 5.30
Speed rpm : 250
Rack travel in mm : 3.80...4.00

CONSTANT REGULATION

Speed rpm : 250...360

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 14.30...14.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.80...11.00
2nd pressure hPa : 110
Rack travel in m: 11.10...11.20
3rd pressure hPa : 670
Rack travel in m: 14.00...14.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm³/ : 132.0...135.0
1000 s: (129.5...137.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 13.30
Speed rpm : 980...990

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 160.0...190.0
1000 s: (156.0...194.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 3.80...4.00
Del.quantity cm³/ : 15.0...19.0
1000 s: (12.5...21.5)
Spread cm³ : 3.00
1000 s: (6.00)

Remarks:

:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 c
 Edition : 07.03.88
 Replaces : 20.11.87
 Test oil : ISO-4113

Combination no. : 0 401 846 860

Injection pump
 Pump designation : PE6P120A32ORS3200
 EP type number : 0 411 826 766
 Governor
 Governor design. : RQV250...1000PA808-1
 Governor no. : 0 421 813 660

Customer-spec. information
 Customer : ENASA

Engine : 96 R1 BX

1st version kW : 265.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 25.6...25.8

100 s: (25.3...26.1)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 3.1...3.5

Del. quantity cm³/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.40

2nd speed rpm : 350
 travel mm : 1.70...2.30

3rd speed rpm : 700
 travel mm : 4.70...5.30

4th speed rpm : 1045
 travel mm : 8.00...8.20

5th speed rpm : 1135
 travel mm : 9.10...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1090

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 1200

Del. quantity : 256.0...258.0
1000 : (253.0...261.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 42...50

Testing:
1st rack travel in: 11.00
Speed rpm : 1050...1060
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 5...13

Testing:
Speed rpm : 100
Minimum rack travel: 4.80
Speed rpm : 250
Rack travel in mm : 3.10...3.50

CONSTANT REGULATION
Speed rpm : 250...330

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 1200
Contr.-rod trav. mm: 12.00...12.10

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.50...8.90
2nd pressure hPa : 710
Rack travel in m: 11.30...11.40
3rd pressure hPa : 440
Rack travel in m: 9.50...9.70

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 900
Del. quantity cm3/ : 249.0...255.0
1000 s: (246.0...258.0)

K20

Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm3/ : 151.0...153.0
1000 s: (148.0...156.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.00
Speed rpm : 1050...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 160.0...190.0
1000 s: (156.0...194.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 3.10...3.50
Del. quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
APPLICATION
Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 E
 Edition : 07.03.88
 Replaces : 2.11.87
 Test oil : ISO-4113

Combination no. : 0 401 846 861

Injection pump
 Pump designation : PE6P120A32ORS3176-1
 EP type number : 0 411 826 767
 Governor
 Governor design. : RQV250...1050PA808
 Governor no. : 0 421 813 553

Customer-spec. information
 Customer : ENASA

Engine : 96 R1 AX

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 33...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)

Rack travel in mm : 9.00...12.00

K21

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1030

 Rack travel in mm : 13.10...13.20

 Del. quantity cm³/ : 23.2...23.4

 100 s: (22.9...23.7)

 Spread cm³ : 0.5

 100 s: (0.9)

2nd speed rpm : 250.0
 Rack travel in mm : 4.2...4.4
 Del. quantity cm³/ : 2.5...3.1
 100 s: (2.2...3.4)
 Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.40
 2nd speed rpm : 350
 travel mm : 1.70...2.30
 3rd speed rpm : 700
 travel mm : 4.50...5.10
 4th speed rpm : 1095
 travel mm : 8.20...8.40
 5th speed rpm : 1195
 travel mm : 9.40...9.80

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1110
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1030
 Aneroid pressure h: 900
 Del. quantity : 232.0...234.0
 1000 : (229.0...237.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 42...50

Testing:
1st rack travel in: 12.10
Speed rpm : 1075...1085
2nd rack travel in: 4.00
Speed rpm : 1165...1195
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:
Speed rpm : 100
Minimum rack travel: 5.90
Speed rpm : 250
Rack travel in mm : 4.20...4.40

CONSTANT REGULATION
Speed rpm : 250...350

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 13.10...13.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.70...10.10
2nd pressure hPa : 550
Rack travel in m: 12.60...12.70
3rd pressure hPa : 280
Rack travel in m: 10.90...11.10

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 650
Del.quantity cm³/ : 229.0...235.0
1000 s: (226.0...238.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 151.0...153.0
1000 s: (148.0...156.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.10
Speed rpm : 1075...1085

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...180.0
1000 s: (146.0...184.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.20...4.40
Del.quantity cm³/ : 25.0...31.0
1000 s: (22.0...34.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
APPLICATION
Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 d
 Edition : 07.03.88
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 846 862

Injection pump
 Pump designation : PE6P110A32ORS3201
 EP type number : 0 411 816 753
 Governor
 Governor design. : RQ250/105OPA218-1
 Governor no. : 0 421 801 406

Customer-spec. information
 Customer : ENASA

Engine : 96 A4 AZ

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.25)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

K23

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 12.5...12.7

100 s : (12.2...13.0)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 7.9...8.1

Del. quantity cm³/ : 1.7...2.3

100 s : (1.4...2.6)

Spread cm³ : 0.4

100 s : (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1030

Del. quantity : 125.0...127.0

1000 : (122.0...130.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:
 Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 11.00
 Speed rpm : 1095...1110

2nd rack travel in: 4.00
 Speed rpm : 1140...1170

4th rack travel in: 1250
 Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack travel: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 290...330

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00

Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 143.0...163.0

1000 s: (139.0...167.0)

LOW IDLE

Speed rpm : 250

Rack travel in mm : 7.90...8.10

Del. quantity cm³/ : 17.0...23.0

1000 s: (14.0...26.0)

Spread cm³ : 4.50

1000 s: (7.50)

Remarks:

:

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 12,2 B
Edition : 07.01.88
Replaces : 16.10.87
Test oil : ISO-4113

Combination no. : 0 401 846 864

Injection pump
Pump designation : PE6P120A320RS3202
EP type number : 0 411 826 769
Governor
Governor design. : RQV300..1050PA657-22
Governor no. : 0 421 813 668

Customer-spec. information
Customer : VOLVO

Engine : TD122K 442

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3,60...3,70
 : (3,55...3,75)

Rack travel in mm : 9,00...12,00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 14.00...14.10

Del. quantity cm³/ : 25.1...25.3

100 s: (24.8...25.6)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0
Rack travel in mm : 4.8...5.0
Del. quantity cm³/ : 1.7...2.2
100 s: (1.4...2.4)
Spread cm³ : 0.5
100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.50...1.90
2nd speed rpm : 500
travel mm : 4.00...4.60
3rd speed rpm : 800
travel mm : 6.30...6.70
4th speed rpm : 1110
travel mm : 7.80...8.00
5th speed rpm : 1205
travel mm : 9.10...9.70

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1150
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Aneroid pressure h: 900
Del. quantity : 251.0...253.0
1000 : (248.0...256.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 58...66

Testing:

1st rack travel in: 13.00
Speed rpm : 1105...1115
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack travel: 6.40
Speed rpm : 300
Rack travel in mm : 4.80...5.00

CONSTANT REGULATION

Speed rpm : 300...390

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 14.00...14.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.10...12.30
2nd pressure hPa : 740
Rack travel in m: 13.80...13.90
3rd pressure hPa : 470
Rack travel in m: 12.40...12.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: ~
Speed rpm : 700
Del. quantity cm³/ : 203.0...205.0
1000 s: (200.0...208.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 13.00
Speed rpm : 1105...1115

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 240.0...280.0
1000 s: (236.0...284.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.80...5.00
Del. quantity cm³/ : 17.0...22.0
1000 s: (14.5...24.5)
Spread cm³ : 5.00
1000 s: (7.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 12,2 B1
 Edition : 07.01.88
 Replaces : 16.10.87
 Test oil : ISO-4113

Combination no. : 0 401 846 865

Injection pump
 Pump designation : PE6P120A32ORS3202
 EP type number : 0 411 826 769
 Governor
 Governor design. : RQV300..1025PA657-23
 Governor no. : 0 421 813 669

Customer-spec. information
 Customer : VOLVO

Engine : TD122A 35

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3,60...3,70
 : (3,55...3,75)

Rack travel in mm : 9,00...12,00

K27

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11,90...12,00

Del. quantity cm³/ : 20,8...21,0

100 s: (20,5...21,3)

Spread cm³ : 0,5

100 s: (0,9)

2nd speed rpm : 300,0

Rack travel in mm : 4,8...5,0

Del. quantity cm³/ : 2,1...2,6

100 s: (1,8...2,8)

Spread cm³ : 0,5

100 s: (0,7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1,50...1,90

2nd speed rpm : 500

travel mm : 4,20...4,80

3rd speed rpm : 800

travel mm : 6,30...6,70

4th speed rpm : 1080

travel mm : 8,30...8,50

5th speed rpm : 1150

travel mm : 9,50...9,90

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1080

Rack travel in mm : 15,20...17,80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 900

Del. quantity : 208,0...210,0

1000 : (205,0...213,0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 58...66

Testing:

1st rack travel in: 10.90
Speed rpm : 1080...1090
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack travel: 6.40
Speed rpm : 300
Rack travel in mm : 4.80...5.00

CONSTANT REGULATION

Speed rpm : 300...390

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 11.90...12.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.60...11.70
2nd pressure hPa : 450
Rack travel in m: 11.70...11.80

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 700
Del.quantity cm³/ : 203.0...205.0
1000 s: (200.0...208.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.90
Speed rpm : 1080...1090

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 240.0...280.0
1000 s: (236.0...284.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.80...5.00
Del.quantity cm³/ : 21.0...26.0
1000 s: (18.5...28.5)
Spread cm³ : 5.00
1000 s: (7.00)

Remarks:

:
Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 S3
Edition : 15.01.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 868

Injection pump
Pump designation : PE6P120A32ORS3186
EP type number : 0 411 826 756
Governor
Governor design. : RQV250...950PA657-14
Governor no. : 0 421 813 658

Customer-spec. information

Customer : VOLVO

Engine : TD102FF

1st version kW : 230.0
Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 68C 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.40...11.50

Del. quantity cm³/ : 19.7...19.9

100 s : (19.4...20.2)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 3.9...4.1

Del. quantity cm³/ : 1.7...2.2

100 s : (1.4...2.4)

Spread cm³ : 0.5

100 s : (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.40

2nd speed rpm : 350
travel mm : 2.20...2.80

3rd speed rpm : 700
travel mm : 6.40...6.60

4th speed rpm : 985
travel mm : 8.20...8.40

5th speed rpm : 1060
travel mm : 9.60...10.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1000

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h : 1000

Del. quantity : 197.0...199.0
1000 : (194.0...202.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 59...67

Testing:

1st rack travel in: 10.40
Speed rpm : 980...990
2nd rack travel in: 4.00
Speed rpm : 1040...1070
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 4...12

Testing:

Speed rpm : 100
Minimum rack travel: 5.40
Speed rpm : 250
Rack travel in mm : 3.90...4.10

CONSTANT REGULATION

Speed rpm : 250...360

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 11.40...11.50

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.80...9.00
2nd pressure hPa : 80
Rack travel in m: 9.20...9.30
3rd pressure hPa : 400
Rack travel in m: 11.10...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del. quantity cm³/ : 143.0...145.0
1000 s: (140.0...148.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 980...990

LOW IDLE

Speed rpm : 250
Rack travel in mm : 3.90...4.10
Del. quantity cm³/ : 17.0...22.0
1000 s: (14.5...24.5)
Spread cm³ : 5.00
1000 s: (7.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 D4
 Edition : 12.02.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 873
 Injection pump
 Pump designation : PE6P120A32ORS3183-1Y
 EP type number : 0 411 826 765
 Governor
 Governor design. : RQ250/1000PA832
 Governor no. : 0 421 801 368

Customer-spec. information

Customer : DAF
 Engine : WS 282

1st version kW : 282.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

 Rack travel in mm : 13.20...13.30

 Del. quantity cm³/ : 22.3...22.5

 100 s: (22.0...22.8)

 Spread cm³ : 0.5

 100 s: (0.9)

2nd speed rpm : 250.0
 Rack travel in mm : 6.6...7.0
 Del. quantity cm³/ : 1.4...2.0
 100 s: (1.1...2.3)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 550
 Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 850
 Aneroid pressure h: 1000
 Del. quantity : 223.0...225.0
 1000 : (220.0...228.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 550
 Rack travel in mm : 15.8

Testing:
 1st rack travel in: 12.20
 Speed rpm : 1035...1050
 2nd rack travel in: 4.00

Speed rpm : 1120...1150
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.8

Testing:

Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 13.40...13.50
2nd speed rpm : 1000
Rack travel in m: 13.30...13.50

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Rack travel in mm : 1000
Contr.-rod trav.mm: 13.20...13.30

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.10...10.30
2nd pressure hPa : 570
Rack travel in m: 12.40...12.50
3rd pressure hPa : 310
Rack travel in m: 10.70...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm³/ : 144.0...146.0
1000 s: (141.0...149.0)

BREAKAWAY

1st version
1mm rack travel less than

LD4

full load rack tr: 12.20
Speed rpm : 1035...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del.quantity cm³/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 d7
Edition : 07.03.88
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 846 873
Injection pump
Pump designation : PE6P120A32ORS3183Y
EP type number : 0 411 826 778
Governor
Governor design. : RQ250/1000PA832
Governor no. : 0 421 801 368

Customer-spec. information
Customer : DAF

Engine : WS 282

1st version kW : 282.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.40...13.50

Del. quantity cm³/ : 22.8...23.0

100 s : (22.5...23.3)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 250.0
Rack travel in mm : 6.6...7.0
Del. quantity cm³/ : 1.4...2.0
100 s : (1.1...2.3)
Spread cm³ : 0.8
100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 550
Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 850
Aneroid pressure h : 1000
Del. quantity : 228.0...230.0
1000 : (225.0...233.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version

Setting point:
Speed rpm : 550
Rack travel in mm : 15.8

Testing:
1st rack travel in: 12.40
Speed rpm : 1035...1050
2nd rack travel in: 4.00

Speed rpm : 1120...1150
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.8

Testing:

Speed rpm : 100
Minimum rack trave: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 13.70...13.80
2nd speed rpm : 1000
Rack travel in m: 13.60...13.80

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Rack travel in mm : 1000
Contr.-rod trav.mm: 13.40...13.50

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.20...10.40
2nd pressure hPa : 520
Rack travel in m: 12.60...12.70
3rd pressure hPa : 280
Rack travel in m: 11.00...11.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm³/ : 145.0...147.0
1000 s: (142.0...150.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.40
Speed rpm : 1035...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del.quantity cm³/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 D5
Edition : 12.02.88
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 846 874
Injection pump
Pump designation : PE6P120A32ORS3183-1
EP type number : 0 411 826 758
Governor
Governor design. : RQ250/1000PA832
Governor no. : 0 421 801 368

Customer-spec. information
Customer : DAF

Engine : WS 259

1st version kW : 259,0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1,50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY
Test pressure, bar : 25...27

L07

Prestroke mm : 3.70...3.80
: (3.65...3.85)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.20...12.30

Del. quantity cm³/ : 20.2...20.4

100 s : (19.9...20.7)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 250.0
Rack travel in mm : 6.6...7.0
Del. quantity cm³/ : 1.6...2.2
100 s : (1.3...2.5)
Spread cm³ : 0.8
100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 550
Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 850
Aneroid pressure h : 1000
Del. quantity : 202.0...204.0
1000 : (199.0...207.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version

Setting point:
Speed rpm : 550
Rack travel in mm : 15.8

Testing:
1st rack travel in : 11.20
Speed rpm : 1035...1050
2nd rack travel in : 4.00

Speed rpm : 1125...1155
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.8

Testing:

Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 12.40...12.50
2nd speed rpm : 1000
Rack travel in m: 12.30...12.50

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Rack travel in mm : 1000
Contr.-rod trav. mm: 12.20...12.30

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.10...10.30
2nd pressure hPa : 430
Rack travel in m: 11.60...11.70
3rd pressure hPa : 280
Rack travel in m: 10.50...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del. quantity cm³/ : 144.0...146.0
1000 s: (141.0...149.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.20
Speed rpm : 1035...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del. quantity cm³/ : 16.0...22.0
1000 s: (13.0...25.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 E4
 Edition : 12.02.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 875
 Injection pump
 Pump designation : PE6P120A32ORS3183-1Y
 EP type number : 0 411 826 765
 Governor
 Governor design. : RQV250...1000PAB51
 Governor no. : 0 421 813 604

Customer-spec. information
 Customer : DAF

Engine : WS 282
 1st version kW : 282.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 019
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,8
 Test lines : 1 680 750 067
 Outside diameter
 x Wall thickness
 x Length mm : 6,00x1,50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

 Rack travel in mm : 13.20...13.30

 Del. quantity cm³/ : 22.3...22.5

 100 s: (22.0...22.8)

 Spread cm³ : 0.5

 100 s: (0.9)

 2nd speed rpm : 250.0
 Rack travel in mm : 6.6...7.0
 Del. quantity cm³/ : 1.4...2.0
 100 s: (1.1...2.3)
 Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.40...1.60
 2nd speed rpm : 400
 travel mm : 3.20...3.60
 3rd speed rpm : 800
 travel mm : 5.80...6.20
 4th speed rpm : 1000
 travel mm : 7.90...8.10

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1025
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 850
 Aneroid pressure h: 1000
 Del. quantity : 223.0...225.0
 1000 : (220.0...228.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:
1st rack travel in: 12.20
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 16...24

Testing:
Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00

CONSTANT REGULATION
Speed rpm : 275...385

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Rack travel in mm : 1000
Contr.-rod trav.mm: 13.20...13.30

Measurement
Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.10...10.30
2nd pressure hPa : 570
Rack travel in m: 12.40...12.50
3rd pressure hPa : 310
Rack travel in m: 10.60...10.90

START CUT-OUT

Speed 1/min : 200 (220)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 144.0...146.0
1000 s: (141.0...149.0)

L10

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.20
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del.quantity cm3/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 ES
 Edition : 12.02.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 876
 Injection pump
 Pump designation : PE6P120A32ORS3183-1Z
 EP type number : 0 411 826 760
 Governor
 Governor design. : RGV250...100CPA851-1
 Governor no. : 0 421 813 605

Customer-spec. information
 Customer : DAF

Engine : WS 225

1st version kW : 225.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

 Rack travel in mm : 11.30...11.40

 Del. quantity cm³/ : 18.1...18.3

 100 s : (17.8...18.6)

 Spread cm³ : 0.5

 100 s : (0.9)

2nd speed rpm : 250.0
 Rack travel in mm : 6.6...7.0
 Del. quantity cm³/ : 1.4...2.0
 100 s : (1.1...2.3)
 Spread cm³ : 0.8
 100 s : (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.40...1.60
 2nd speed rpm : 400
 travel mm : 3.20...3.60
 3rd speed rpm : 800
 travel mm : 5.80...6.20
 4th speed rpm : 1000
 travel mm : 7.90...8.10

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1025
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 850
 Aneroid pressure h : 1000
 Del. quantity : 181.0...183.0
 1000 : (178.0...186.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 50...58

Testing:
1st rack travel in: 10.30
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1120...1150
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 16...24

Testing:
Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00

CONSTANT REGULATION
Speed rpm : 275...385

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Rack travel in mm : 1000
Contr.-rod trav.mm: 11.30...11.40

Measurement
Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.10...10.30
2nd pressure hPa : 330
Rack travel in m: 11.00...11.10
3rd pressure hPa : 260
Rack travel in m: 10.50...10.70

START CUT-OUT

Speed 1/min : 200 (220)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 144.0...146.0
1000 s: (141.0...149.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.30
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del.quantity cm3/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 E6
Edition : 12.02.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 877

Injection pump
Pump designation : PE6P120A32ORS3183-1
EP type number : 0 411 826 758
Governor
Governor design. : RQV250...1000PA851-2
Governor no. : 0 421 813 606

Customer-spec. information
Customer : DAF

Engine : WS 259

1st version kW : 259.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp, °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.20...12.30

Del. quantity cm³/ : 20.2...20.4

100 s : (19.9...20.7)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del. quantity cm³/ : 1.4...2.0

100 s : (1.1...2.3)

Spread cm³ : 0.8

100 s : (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.40...1.60

2nd speed rpm : 400
travel mm : 3.20...3.60

3rd speed rpm : 800
travel mm : 5.80...6.20

4th speed rpm : 1000
travel mm : 7.90...8.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1025

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h : 1000

Del. quantity : 202.0...204.0

1000 : (199.0...207.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:
1st rack travel in: 11.20
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1120...1150
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 16...24

Testing:
Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00

CONSTANT REGULATION
Speed rpm : 275...385

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Rack travel in mm : 1000
Contr.-rod trav.mm: 12.20...12.30

Measurement
Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.10...10.30
2nd pressure hPa : 430
Rack travel in m: 11.60...11.70
3rd pressure hPa : 280
Rack travel in m: 10.50...10.70

START CUT-OUT

Speed 1/min : 200 (0)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 144.0...146.0
1000 s: (141.0...149.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.20
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del.quantity cm3/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 D6
Edition : 12.02.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 878

Injection pump
Pump designation : PE6P120A32ORS3183-1Z
EP type number : 0 411 826 760
Governor
Governor design. : RQ250/1000PAB32-1
Governor no. : 0 421 801 387

Customer-spec. information

Customer : DAF

Engine : WS 225

1st version kW : 225.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY
Test pressure, bar : 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 11.30...11.40

Del. quantity cm³/ : 18.1...18.3

100 s : (17.8...18.6)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 250.0
Rack travel in mm : 6.6...7.0
Del. quantity cm³/ : 1.4...2.0
100 s : (1.1...2.3)
Spread cm³ : 0.8
100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 550
Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 850
Aneroid pressure h : 1000
Del. quantity : 181.0...183.0
1000 : (178.0...186.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Setting point:
Speed rpm : 550
Rack travel in mm : 15.8

Testing:
1st rack travel in: 10.30
Speed rpm : 1035...1050
2nd rack travel in: 4.00

Speed rpm : 1120...1150
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.8

Testing:

Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 11.50...11.60
2nd speed rpm : 1000
Rack travel in m: 11.40...11.60

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Rack travel in mm : 1000
Contr.-rod trav.mm: 11.30...11.40

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.10...10.30
2nd pressure hPa : 330
Rack travel in m: 11.00...11.10
3rd pressure hPa : 260
Rack travel in m: 10.50...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 144.0...146.0
1000 s: (141.0...149.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.30
Speed rpm : 1035...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del.quantity cm3/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

APPLICATION
Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : UNI 13,8 c1
Edition : 26.02.88
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 846 879
Injection pump
Pump designation : PE6P120A720RS3192
EP type number : 0 411 826 761
Governor
Governor design. : RQV300...900PA857-1
Governor no. : 0 421 813 683

Customer-spec. information
Customer : IVECO-UNIC

Engine : 8210.42.101

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Test nozzle holder
assembly : 1 688 901 019
Opening
pressure, bar : 207...210
Orifice plate
diameter mm : 0,8
Test lines : 1 680 750 067
Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27
Prestroke mm : 3,40...3,50
 : (3,35...3,55)
Rack travel in mm : 9,00...12,00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900
Rack travel in mm : 13.20...13.30
Del. quantity cm³/ : 24.9...25.1
100 s : (24.6...25.4)
Spread cm³ : 0.5
100 s : (0.9)
2nd speed rpm : 300.0
Rack travel in mm : 4.3...4.5
Del. quantity cm³/ : 1.5...2.1
100 s : (1.2...2.4)
Spread cm³ : 0.8
100 s : (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 0.70...0.90
2nd speed rpm : 550
travel mm : 4.00...4.60
3rd speed rpm : 800
travel mm : 6.60...6.90
4th speed rpm : 900
travel mm : 7.70...7.90

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 950
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 900
Aneroid pressure h : 900
Del. quantity : 249.0...251.0
1000 : (246.0...254.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 57...65

Testing:
1st rack travel in: 12.20
Speed rpm : 940...950
2nd rack travel in: 4.00
Speed rpm : 1060...1090
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 4...12

Testing:
Speed rpm : 100
Minimum rack travel: 5.90
Speed rpm : 300
Rack travel in mm : 4.30...4.50

CONSTANT REGULATION
Speed rpm : 370...490

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav.mm: 13.20...13.30

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.90...9.10
2nd pressure hPa : 580
Rack travel in m: 12.10...12.20
3rd pressure hPa : 390
Rack travel in m: 9.80...10.20

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 500
Del. quantity cm³/ : 249.0...255.0
1000 s: (246.0...258.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 119.0...121.0
1000 s: (116.0...124.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.20
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 235.0...265.0
1000 s: (231.0...269.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.30...4.50
Del. quantity cm³/ : 15.0...21.0
1000 s: (12.0...24.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 S10
Edition : 18.12.87
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 846 880
Injection pump
Pump designation : PE6P110A32OLS3835-1
EP type number : 0 411 816 755
Governor
Governor design. : RQ300/1050PA187-19
Governor no. : 0 421 801 428

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 160.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 13.00...13.10

Del. quantity cm³/ : 12.6...12.8

100 s: (12.2...13.0)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 8.8...9.0

Del. quantity cm³/ : 1.5...2.1

100 s: (1.2...2.3)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.60...14.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del. quantity : 126.0...128.0

1000 : (122.5...130.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 14.0

Testing:

1st rack travel in: 12.30

Speed rpm : 1095...1110

2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1300
Speed rpm : 0.00...2.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.9

Testing:

Speed rpm : 200
Minimum rack travel: 8.50
Speed rpm : 300
Rack travel in mm : 6.80...7.00
Rack travel in mm : 2.00
Speed rpm : 400...440

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1050
2nd speed rpm : 600
3rd speed rpm : 900

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1050
Del. quantity cm³/ : 138.0...142.0
1000 s: (135.0...145.0)
Spread cm³ : 6.00
1000 s: (9.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 12.30
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 s10
Edition : 12.02.88
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 846 881
Injection pump
Pump designation : PE6P110A32QLS3835-1
EP type number : 0 411 816 755
Governor
Governor design. : RQV300..10SOPA884
Governor no. : 0 421 813 685

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 160.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING G. DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 13.00...13.10

Del. quantity cm³/ : 12.6...12.8

100 s: (12.3...13.0)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0
Rack travel in mm : 8.8...9.0
Del. quantity cm³/ : 1.5...2.1
100 s: (1.2...2.3)

Spread cm³ : 0.4
100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.10...1.30
2nd speed rpm : 500
travel mm : 3.70...4.00
3rd speed rpm : 800
travel mm : 5.80...6.10
4th speed rpm : 1090
travel mm : 8.10...8.50
5th speed rpm : 1170
travel mm : 9.50...10.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1100
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 750

Del. quantity : 126.0...128.0
1000 : (123.5...130.5)
Spread cm³ : 4.00
1000 : (7.50)

Del. quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:
APPLICATION :
Omnibus

RATED SPEED

1st version
Control lever
position degrees: 53...61

Testing:
1st rack travel in: 12.00
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1160...1190
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 18...26

Testing:
Speed rpm : 200
Minimum rack travel: 10.30
Speed rpm : 300
Rack travel in mm : 8.80...9.00

CONSTANT REGULATION
Speed rpm : 300...550

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 1050
Del. quantity cm³/ : 138.0...142.0
1000 s: (135.0...145.0)
Spread cm³ : 6.00
1000 s: (9.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 14,5 A
Edition : 11.12.87
Replaces : 30.3.87
Test oil : ISO-4113
Combination no. : 0 401 848 082
Injection pump
Pump designation : PE8P110A520/SLS851
EP type number : 0 411 818 046
Governor
Governor design. : RQ250/1150PA688
Governor no. : 0 421 801 231

Customer-spec. information
Customer : MAN

Engine : D2848T

1st version kW : 245.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
: (2.95...3.15)
Rack travel in mm : 9.00...12.00

Firing order : 8- 7- 2- 6- 3- 5-
4- 1

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 10.80...10.90

Del. quantity cm³/ : 14.3...14.5

100 s : (14.0...14.7)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 250.0
Rack travel in mm : 4.9...5.1
Del. quantity cm³/ : 1.8...2.4
100 s : (1.5...2.6)
Spread cm³ : 0.4
100 s : (0.7)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -2
Speed rpm : 600
Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150
Aneroid pressure h: 1000
Del. quantity : 143.0...145.0
1000 : (140.5...147.5)
Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Setting point:
Speed rpm : 600
Rack travel in mm : 20.0

Testing:
1st rack travel in: 9.80
Speed rpm : 1195...1210
2nd rack travel in: 4.00

Speed rpm : 1280...1310
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.0

Testing:

Speed rpm : 100
Minimum rack travel: 6.50
Speed rpm : 250
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 310...350

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 10.80...10.90
2nd speed rpm : 700
Rack travel in m: 10.80...11.00

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 10.80...10.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.60...9.70
2nd pressure hPa : 290
Rack travel in m: 10.50...10.60
3rd pressure hPa : 230
Rack travel in m: 10.00...10.20

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 700
Del.quantity cm³/ : 137.0...141.0
1000 s: (134.0...144.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 108.0...110.0
1000 s: (105.5...112.5)

Spread cm³ : -
1000 s: (7.50)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.80
Speed rpm : 1195...1210

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 190.0...210.0
1000 s: (186.0...214.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.90...5.10
Del.quantity cm³/ : 18.0...24.0
1000 s: (15.5...26.5)
Spread cm³ : 4.50
1000 s: (7.50)

Remarks:

: MAN-NR. 2-7353

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 17,2 d
Edition : 26.02.88
Replaces : 22.5.87
Test oil : ISO-4113

Combination no. : 0 401 848 757

Injection pump
Pump designation : PE8P120A920/SLS3827
EP type number : 0 411 828 712
Governor
Governor design. : RQV300...900PA475-1
Governor no. : 0 421 813 420

Customer-spec. information
Customer : IVECO-FIAT

Engine : 8280.22.201

1st version kW : 309.0
Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 8- 4- 3- 6- 5-
7- 2

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 12.60...12.70

Del. quantity cm³/ : 21.2...21.4

100 s : (20.9...21.7)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 300.0
Rack travel in mm : 5.0...5.2
Del. quantity cm³/ : 1.7...2.3
100 s : (1.4...2.6)

Spread cm³ : 0.6
100 s : (1.0)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.40...1.80
2nd speed rpm : 450
travel mm : 3.60...4.00
3rd speed rpm : 750
travel mm : 6.10...6.50
4th speed rpm : 900
travel mm : 7.70...7.90

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 960
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 900
Aneroid pressure h : 900

Del. quantity : 212.0...214.0
1000 : (209.0...217.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 56...64

Testing:

1st rack travel in: 11.60
Speed rpm : 940...950
2nd rack travel in: 4.00
Speed rpm : 1050...1080
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 7...15
Rack travel in mm : 5.1

Testing:

Speed rpm : 100
Minimum rack travel: 6.40
Speed rpm : 300
Rack travel in mm : 5.00...5.20

CONSTANT REGULATION

Speed rpm : 310...415

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 900
Contr.-rod trav. mm: 12.60...12.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.00...9.30
2nd pressure hPa : 440
Rack travel in m: 11.60...11.70
3rd pressure hPa : 340
Rack travel in m: 9.60...10.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 550

Del. quantity cm³/ : 227.0...235.0
1000 s: (224.0...238.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 132.0...134.0
1000 s: (129.0...137.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.60
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,6 K 9
 Edition : 18.12.87
 Replaces : 31.10.86
 Test oil : ISO-4113

Combination no. : 0 401 848 763

Injection pump
 Pump designation : PE8P120A32QLS3807-10
 EP type number : 0 411 828 713
 Governor
 Governor design. : RQV300...1150PA545-6
 Governor no. : 0 421 813 594

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM422 LA

1st version kW : 276.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1150

 Rack travel in mm : 11.50...11.60

 Del. quantity cm³/ : 17.5...17.7

 100 s: (17.2...18.0)

 Spread cm³ : 0.5

 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 5.1...5.3
 Del. quantity cm³/ : 1.2...2.0
 100 s: (0.9...2.3)
 Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.40...1.60
 2nd speed rpm : 800
 travel mm : 6.00...6.20
 3rd speed rpm : 1200
 travel mm : 7.90...8.40
 4th speed rpm : 1300
 travel mm : 9.00...9.50

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1190
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150
Aneroid pressure h: 700
Del. quantity : 175.0...177.0
1000 : (172.0...180.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 49...57

Testing:

1st rack travel in: 10.50
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1270...1300
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 13...21

Testing:

Speed rpm : 100
Minimum rack travel: 6.80
Speed rpm : 300
Rack travel in mm : 5.10...5.30

CONSTANT REGULATION

Speed rpm : 300...400

TORQUE CONTROL

Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 11.50...11.60
2nd speed rpm : 750
Rack travel in m: 11.80...12.00

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : -
Contr. rod trav. mm: 10.20...10.40

Measurement

Speed 1/min : 500

1st pressure hPa : 410
Rack travel in m: 10.50...10.60
2nd pressure hPa : 490
Rack travel in m: 11.10...11.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 750
Del. quantity cm³/ : 187.0...190.0
1000 s: (184.0...193.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 137.0...139.0
1000 s: (134.0...142.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.50
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,6 F 4
 Edition : 07.01.88
 Replaces : 10.85
 Test oil : ISO-4113

Combination no. : 0 401 848 772

Injection pump
 Pump designation : PE8P120A32OLS3811-11
 EP type number : 0 411 828 717
 Governor
 Governor design. : RQ300/1150PA556-1
 Governor no. : 0 421 801 290

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM422A

1st version kW : 243.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6,00X1,50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1150

 Rack travel in mm : 10.40...10.50

 Del. quantity cm³/ : 16.0...16.2

 100 s : (15.7...16.5)

 Spread cm³ : 0.5

 100 s : (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 5.0...5.2
 Del. quantity cm³/ : 1.4...2.2
 100 s : (1.1...2.5)
 Spread cm³ : 0.8
 100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 14.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 160.0...162.0
 1000 : (157.0...165.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 15.5

Testing:

1st rack travel in: 9.40
Speed rpm : 1195...1210
2nd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.1

Testing:

Speed rpm : 100
Minimum rack trave: 6.70
Speed rpm : 300
Rack travel in mm : 5.00...5.20
Rack travel in mm : 2.00
Speed rpm : 360...400

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del. quantity cm³/ : 152.0...158.0
1000 s: (149.0...161.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1195...1210

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 9,6 X
Edition : 15.01.88
Replaces : 6.11.87
Test oil : IS0-4113

Combination no. : 0 401 848 792

Injection pump
Pump designation : PE8P120A920/SLS3208
EP type number : 0 411 828 721
Governor
Governor design. : RQ325/1150PA879
Governor no. : 0 421 801 417

Customer-spec. information
Customer : KHD

Engine : BF8LS13CP

1st version kW : 294.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 3.40...3.50
 : (3.35...3.55)
Rack travel in mm : 15.00...19.00
Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.30...12.40

Del. quantity cm³/ : 18.9...19.1

100 s : (18.6...19.4)

Spread cm³ : 0.6

100 s : (1.0)

2nd speed rpm : 325.0
Rack travel in mm : 6.5...6.7
Del. quantity cm³/ : 1.6...2.2
100 s : (1.3...2.5)
Spread cm³ : 0.9
100 s : (1.3)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 700
Rack travel in mm : 14.70...16.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150
Aneroid pressure h : 900
Del. quantity : 189.0...191.0
1000 : (186.0...194.0)
Spread cm³ : 6.00
1000 : (10.00)

RATED SPEED

1st version
Setting point:
Speed rpm : 700
Rack travel in mm : 15.5

Testing:

1st rack travel in: 11.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1260...1290
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.6

Testing:

Speed rpm : 100
Minimum rack travel: 8.10
Speed rpm : 325
Rack travel in mm : 6.50...6.70
Rack travel in mm : 2.00
Speed rpm : 400...440

CONSTANT REGULATION

Speed rpm : 300...510

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 400
Rack travel in mm : 900
Contr.-rod trav.mm: 12.30...12.40

Measurement

Speed 1/min : 400

1st pressure hPa : -
Rack travel in m: 9.40...9.60
2nd pressure hPa : 230
Rack travel in m: 9.80...9.90
3rd pressure hPa : 350
Rack travel in m: 10.90...11.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 400
Del.quantity cm³/ : 86.0...88.0
1000 s: (83.0...91.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.30
Speed rpm : 1190...1200

MD4

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 235.0...265.0
1000 s: (230.0...270.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Rail car

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 D 5
Edition : 18.12.87
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 848 793

Injection pump
Pump designation : PE8P110A32OLS3842
EP type number : 0 411 818 714
Governor
Governor design. : RQV300..1050PA524-12
Governor no. : 0 421 813 679

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 192.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 11.50...11.60

Del. quantity cm³/ : 11.7...11.9

100 s: (11.4...12.1)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 8.4...8.4

Del. quantity cm³/ : 1.5...2.1

100 s: (1.2...2.3)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.20...1.50

2nd speed rpm : 800
travel mm : 5.60...6.00

3rd speed rpm : 1110
travel mm : 7.80...8.40

4th speed rpm : 1150
travel mm : 8.80...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1050

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del. quantity : 117.0...119.0

1000 : (114.5...121.5)

Spread cm3 : 4.00
1000 : (8.00)

RATED SPEED

1st version
Control lever
position degrees: 48...56

Testing:
1st rack travel in: 10.50
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1135...1165
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 18...26

Testing:
Speed rpm : 200
Minimum rack travel: 10.50
Speed rpm : 300
Rack travel in mm : 8.40...8.60

CONSTANT REGULATION
Speed rpm : 300...450

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del. quantity cm3/ : 97.0...100.0
1000 s: (94.0...103.0)
Spread cm3 : 8.00
1000 s: (11.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.50
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 C 5
Edition : 18.12.87
Replaces : 20.11.87
Test oil : IS0-4113

Combination no. : 0 401 848 794

Injection pump
Pump designation : PE8P110A32OLS3842
EP type number : 0 411 818 714
Governor
Governor design. : RQ300/1050PA187-18
Governor no. : 0 421 801 430

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : 0M442

1st version kW : 213.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
4- 1

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 12.70...12.80

Del. quantity cm³/ : 12.6...12.8

100 s: (12.3...13.0)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0
Rack travel in mm : 8.6...8.8
Del. quantity cm³/ : 1.5...2.1
100 s: (1.2...2.3)
Spread cm³ : 0.4
100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 650
Rack travel in mm : 13.60...14.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 750
Del. quantity : 126.0...128.0
1000 : (123.5...130.5)
Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Setting point:
Speed rpm : 650
Rack travel in mm : 14.0

Testing:
1st rack travel in: 11.70

Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1350
Speed rpm : 0.00...2.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 6.9

Testing:

Speed rpm : 200

Minimum rack trave: 9.00

Speed rpm : 300

Rack travel in mm : 6.80...7.00

Rack travel in mm : 2.00

Speed rpm : 400...440

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1050

Del.quantity cm3/ : 136.0...140.0

1000 s: (133.0...143.0)

Spread cm3 : 7.00

1000 s: (10.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70

Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...160.0

1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 d 6
 Edition : 11.03.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 848 795
 Injection pump
 Pump designation : PE8P110A320LS3842
 EP type number : 0 411 818 714
 Governor
 Governor design. : RQV300..10SOPA884-1
 Governor no. : 0 421 813 686

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 213.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 750

 Rack travel in mm : 12.70...12.80

 Del. quantity cm³/ : 12.6...12.8

 100 s: (12.3...13.0)

 Spread cm³ : 0.4

 100 s: (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 8.4...8.8
 Del. quantity cm³/ : 1.5...2.1
 100 s: (1.2...2.3)
 Spread cm³ : 0.4
 100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL
 1st speed rpm : 300
 travel mm : 1.10...1.40
 2nd speed rpm : 800
 travel mm : 7.80...8.20
 3rd speed rpm : 1100
 travel mm : 8.20...8.60
 4th speed rpm : 1150
 travel mm : 9.10...9.70

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -1
 Speed rpm : 1085
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Del. quantity : 126.0...128.0
 1000 : (123.5...130.5)

Spread cm³ : 4.00
1000 : (7.50)

Remarks: :

RATED SPEED

1st version
Control lever
position degrees: 53...61

Testing:

1st rack travel in: 11.70
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 18...26

Testing:

Speed rpm : 200
Minimum rack trave: 10.00
Speed rpm : 300
Rack travel in mm : 6.80...7.00

CONSTANT REGULATION

Speed rpm : 300...400

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1050
Del. quantity cm³/ : 136.0...140.0
1000 s: (133.0...143.0)
Spread cm³ : 7.00
1000 s: (10.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 C 6
Edition : 26.02.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 848 796

Injection pump
Pump designation : PE8P110A32OLS3842-1
EP type number : 0 411 818 716
Governor
Governor design. : RQ300/1050PA187-18
Governor no. : 0 421 801 430

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 213.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 12.70...12.80

Del. quantity cm³/ : 12.6...12.8

100 s: (12.3...13.0)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 8.4...8.8

Del. quantity cm³/ : 1.5...2.1

100 s: (1.2...2.3)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 2.20...2.50

2nd speed rpm : 650

travel mm : 6.90...7.10

3rd speed rpm : 1110

travel mm : 7.20...7.60

4th speed rpm : 1160

travel mm : 9.80...10.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.60...14.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del. quantity : 126.0...128.0

1000 : (123.5...130.5)

Spread cm³ : 4.00
1000 : (7.50)

Del. quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

RATED SPEED

Remarks:

1st version

Setting point:

Speed rpm : 650
Rack travel in mm : 14.0

Testing:

1st rack travel in: 11.70
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1350
Speed rpm : 0.00...2.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.9

Testing:

Speed rpm : 200
Minimum rack trave: 9.00
Speed rpm : 300
Rack travel in mm : 6.80...7.00
Rack travel in mm : 2.00
Speed rpm : 400...440

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1050
Del. quantity cm³/ : 136.0...140.0
1000 s: (133.0...143.0)
Spread cm³ : 7.00
1000 s: (10.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,6 m 3
Edition : 12.02.88
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 848 797
Injection pump
Pump designation : PE8P110A32OLS3813-10
EP type number : 0 411 818 712
Governor
Governor design. : RQV350...1150PA378-6
Governor no. : 0 421 813 619

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 206.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 11.50...11.60

Del. quantity cm³/ : 13.1...13.3

100 s: (12.8...13.5)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 350.0

Rack travel in mm : 7.3...7.6

Del. quantity cm³/ : 1.4...1.8

100 s: (1.1...2.0)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
travel mm : 1.50...1.70

2nd speed rpm : 500
travel mm : 1.70...1.90

3rd speed rpm : 800
travel mm : 4.60...4.90

4th speed rpm : 1175
travel mm : 7.60...7.90

5th speed rpm : 1300
travel mm : 9.10...9.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1230

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150

Del.quantity : 131.0...133.0
1000 : (128.5...135.5)
Spread cm3 : 4.00
1000 : (8.00)

RATED SPEED

1st version
Control lever
position degrees: 58...66

Testing:

1st rack travel in: 10.50
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1280...1310
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 10...18

Testing:

Speed rpm : 100
Minimum rack travel: 8.70
Speed rpm : 350
Rack travel in mm : 7.30...7.60

CONSTANT REGULATION

Speed rpm : 385...495

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 109.0...113.0
1000 s: (106.0...116.0)

Spread cm3 : 6.00
1000 s: (9.0)

Speed rpm : 1150
Del.quantity cm3/ : 84.0...87.0 *
1000 s: (81.0...90.0)

Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.50
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 18,3 D 6
 Edition : 13.05.87
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 849 706

Injection pump
 Pump designation : PE10P110A320LS3818-10
 EP type number : 0 411 819 705
 Governor
 Governor design. : RQV300...1150PA486-2
 Governor no. : 0 421 813 335

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 423

1st version kW : 261,0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 130...150

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6,00x1,50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

M15

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

Phasing : 0-45-72-117-144-189-
 Phasing : 216-261-288-333
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 1150

 Rack travel in mm : 11.20...11.30

 Del. quantity cm³/ : 12.6...12.8

 100 s: (12.3...13.0)

 Spread cm³ : 0.4

 100 s: (0.8)

2nd speed rpm : 300.0
 Rack travel in mm : 7.9...8.1
 Del. quantity cm³/ : 1.4...2.2
 100 s: (1.1...2.4)
 Spread cm³ : 0.4
 100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL
 1st speed rpm : 300
 travel mm : 1.60...1.80
 2nd speed rpm : 800
 travel mm : 5.80...6.20
 3rd speed rpm : 1200
 travel mm : 8.20...8.40
 4th speed rpm : 1260
 travel mm : 9.60...10.40

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -1
 Speed rpm : 1230
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150

Del. quantity : 126.0...128.0
1000 : (123.5...130.5)
Spread cm³ : 4.00
1000 : (8.00)

RATED SPEED

1st version
Control lever
position degrees: 48...56

Testing:
1st rack travel in: 10.20
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1235...1265
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 14...22

Testing:
Speed rpm : 100
Minimum rack travel: 10.20
Speed rpm : 300
Rack travel in mm : 7.90...8.10
Rack travel in mm : 2.00

CONSTANT REGULATION
Speed rpm : 300...500

TORQUE CONTROL
Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 11.20...11.30
2nd speed rpm : 600
Rack travel in m: 11.50...11.70
3rd speed rpm : 900
Rack travel in m: 11.50...11.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del. quantity cm³/ : 110.0...114.0
1000 s: (107.0...117.0)
Spread cm³ : 6.00
1000 s: (9.00)
Speed rpm : 900
Del. quantity cm³/ : 118.0...123.0
1000 s: (115.0...126.0)

Spread cm³ : 6.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.20
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks: :

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 18,2 C
Edition : 22.01.88
Replaces : 20.11.87
Test oil : ISO-4113

Combination no. : 0 401 849 734

Injection pump
Pump designation : PE10P120A520/4LS3843
EP type number : 0 411 829 707
Governor
Governor design. : RQ300/1000PA837
Governor no. : 0 421 801 372

Customer-spec. information
Customer : MAN

Engine : D2840LF/460

1st version kW : 338,0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.90...4.00
 : (3.85...4.05)
Rack travel in mm : 9.00...12.00
Firing order : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

Phasing : 0-45-72-117-144-189-
 216-261-288-333
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.30...11.40

Del. quantity cm³/ : 20.4...20.6

100 s : (20.1...20.9)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 300.0
Rack travel in mm : 6.0...6.2
Del. quantity cm³/ : 1.7...2.3
100 s : (1.4...2.6)
Spread cm³ : 0.8
100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -2
Speed rpm : 600
Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Aneroid pressure h: 1000
Del. quantity : 204.0...206.0
1000 : (201.0...209.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Setting point:
Speed rpm : 600
Rack travel in mm : 20.0

Testing:

1st rack travel in: 10.30
Speed rpm : 1045...1060
2nd rack travel in: 4.00
Speed rpm : 1125...1155
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.1

Testing:

Speed rpm : 100
Minimum rack travel: 7.60
Speed rpm : 300
Rack travel in mm : 6.00...6.20
Rack travel in mm : 2.00
Speed rpm : 365...405

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 11.80...11.90
2nd speed rpm : 600
Rack travel in m: 11.80...12.00

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 11.30...11.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.10...10.20
2nd pressure hPa : 530
Rack travel in m: 10.40...10.50
3rd pressure hPa : 650
Rack travel in m: 10.90...11.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 144.0...146.0
1000 s: (141.0...149.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.30
Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000 s: (186.0...214.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.00...6.20
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7778

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 18,2 C1
Edition : 22.01.88
Replaces : 26.6.87
Test oil : ISO-4113

Combination no. : 0 401 849 735

Injection pump
Pump designation : PE10P120A520/4LS3843
EP type number : 0 411 829 707
Governor
Governor design. : RQV300...1000PA838
Governor no. : 0 421 813 585

Customer-spec. information
Customer : MAN

Engine : D284OLF/460

1st version kW : 338.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.90...4.00
 : (3.85...4.05)
Rack travel in mm : 9.00...12.00
Firing order : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

Phasing : 0-45-72-117-144-189-
 216-261-288-333
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.30...11.40

Del. quantity cm³/ : 20.4...20.6

100 s : (20.1...20.9)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 300.0
Rack travel in mm : 6.0...6.2
Del. quantity cm³/ : 1.7...2.3
100 s : (1.4...2.6)

Spread cm³ : 0.8
100 s : (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.00...1.40
2nd speed rpm : 500
travel mm : 3.10...3.50
3rd speed rpm : 850
travel mm : 6.60...6.90
4th speed rpm : 1000
travel mm : 7.70...7.90

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1150
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Aneroid pressure h: 1000

Del. quantity : 204.0...206.0
1000 : (201.0...209.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 49...57

Testing:
1st rack travel in: 10.30
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1115...1145
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 13...21

Testing:
Speed rpm : 100
Minimum rack travel: 7.60
Speed rpm : 300
Rack travel in mm : 6.00...6.20
Rack travel in mm : 2.00

CONSTANT REGULATION
Speed rpm : 335...445

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav. mm: 11.30...11.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.10...10.20
2nd pressure hPa : 530
Rack travel in m: 10.40...10.50
3rd pressure hPa : 650
Rack travel in m: 10.90...11.10

START CUT-OUT

Speed 1/min : 230 (250)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 144.0...146.0
1000 s: (141.0...149.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.30
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 190.0...210.0
1000 s: (186.0...214.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.00...6.20
Del. quantity cm³/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:
: MAN-NR. 2-7779

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 D 1
Edition : 18.12.87
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 401 876 739

Injection pump
Pump designation : PE6P110A320LS3805-10
EP type number : 0 411 816 740
Governor
Governor design. : RSV650...1150P1A820-
3

Governer no. : 0 421 833 177

Customer-spec. information

Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 155.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

M21

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1180

Rack travel in mm : 12.50...12.60

Del. quantity cm³/ : 13.7...13.9

100 s: (13.4...14.1)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 650.0

Rack travel in mm : 6.0...6.2

Del. quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1180

Del. quantity : 137.0...139.0

1000 : (134.5...141.5)

Spread cm³ : 4.00

1000 : (8.00)

RATED SPEED

1st version

Control lever

position degrees: 53...61

Testing:

1st rack travel in: 11.50
Speed rpm : 1210...1220
2nd rack travel in: 4.00
Speed rpm : 1240...1260
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 26...34
Setting point w/out bumper spring
Speed rpm : 650
Rack travel in mm : 6.1

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 650
Rack travel in mm : 6.00...6.20
Rack travel in mm : 2.00
Speed rpm : 650...715

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1180
Rack travel in m: 12.40...12.50
2nd speed rpm : 970
Rack travel in m: 12.90...13.10
3rd speed rpm : 1100
Rack travel in m: 12.50...12.70
4th speed rpm : 700
Rack travel in m: 13.10...13.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 970
Del. quantity cm³/ : 137.0...141.0
1000 s: (134.0...144.0)
Spread cm³ : 6.00
1000 s: (9.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1210...1220

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

When adjusting and checking, adjust speed regulation to 1210...1220 l/min. Afterwards, readjust speed regulation to 1160...1170 l/min.

APPLICATION

Forage harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 D 5
 Edition : 18.12.87
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 876 739A
 Injection pump
 Pump designation : PE6P110A320LS3805-10
 EP type number : 0 411 816 740
 Governor
 Governor design. : RSV650...1150P1A820-3
 Governor no. : 0 421 833 177

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 155.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1180

Rack travel in mm : 13.00...13.10

Del. quantity cm³/ : 14.5...14.7

100 s: (14.2...14.9)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 650.0

Rack travel in mm : 6.0...6.2

Del. quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1180

Del. quantity : 145.0...147.0

1000 : (142.5...149.5)

Spread cm³ : 4.00

1000 : (8.00)

RATED SPEED

1st version

Control lever

position degrees: 53...61

Testing:

1st rack travel in: 12.00
Speed rpm : 1210...1220
2nd rack travel in: 4.00
Speed rpm : 1240...1260
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 26...34
Setting point w/out bumper spring
Speed rpm : 650
Rack travel in mm : 6.1

Testing:
Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 650
Rack travel in mm : 6.00...6.20
Rack travel in mm : 2.00
Speed rpm : 650...715

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1180
Rack travel in m: 12.90...13.00
2nd speed rpm : 970
Rack travel in m: 13.40...13.60
3rd speed rpm : 1100
Rack travel in m: 13.00...13.20
4th speed rpm : 700
Rack travel in m: 13.60...13.80

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 970
Del. quantity cm³/ : 144.0...148.0
1000 s: (141.0...151.0)
Spread cm³ : 6.00
1000 s: (9.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.00
Speed rpm : 1210...1220

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks: :

When adjusting and checking, adjust speed regulation to 1210...1220 l/min. Afterwards, readjust speed regulation to 1160...1170 l/min.

APPLICATION
Combine-harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 Q 8
Edition : 18.12.87
Replaces : 7.12.87
Test oil : ISO-4113

Combination no. : 0 401 876 740A

Injection pump
Pump designation : PE6P120A32OLS3815-10
EP type number : 0 411 826 735
Governor
Governor design. : RSV750...1150P1A820-
4
Governor no. : 0 421 833 179

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM421A

1st version kW : 184.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1180

Rack travel in mm : 10.40...10.50

Del. quantity cm³/ : 15.3...15.5

100 s: (15.0...15.8)

Spread cm³ : 0.5

100 s: (0,9)

2nd speed rpm : 750.0

Rack travel in mm : 3.3...3.5

Del. quantity cm³/ : 1.8...2.4

100 s: (1.5...2.7)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1180

Del. quantity : 153.0...155.0

1000 : (150.0...158.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 56...64

Testing:

1st rack travel in: 9.40
Speed rpm : 1210...1220
2nd rack travel in: 4.00
Speed rpm : 1240...1260
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 32...40
Setting point w/out bumper spring
Speed rpm : 750
Rack travel in mm : 3.4
Speed rpm : 750
Rack travel in mm : 3.30...3.50
Rack travel in mm : 2.00
Speed rpm : 755...815

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1180
Rack travel in m: 10.40...10.50
2nd speed rpm : 975
Rack travel in m: 11.00...11.20
3rd speed rpm : 600
Rack travel in m: 11.30...11.50

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 950
Del. quantity cm³/ : 164.0...168.0
1000 s: (161.0...171.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1210...1220

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

When adjusting and checking, adjust
speed regulation to 1210...1220 l/min.
Afterwards, readjust speed regulation
to 1160...1170 l/min.

APPLICATION

Forage harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 Q 9
 Edition : 18.12.87
 Replaces : -
 Test oil : ISO-4113

 Combination no. : 0 401 876 740B

 Injection pump
 Pump designation : PE6P120A32OLS3815-10
 EP type number : 0 411 826 735
 Governor
 Governor design. : RSV750...1150P1A820-
 4
 Governor no. : 0 421 833 179

 Customer-spec. information
 Customer : DAIMLER-BENZ

 Engine : OM421A

 1st version kW : 184.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

 Test oil
 inlet temp. °C : 38...42

 Overflow valve : 1 417 413 025

 Inlet press., bar : 1.50

 Overflow
 quantity min. 1/h: 100...120

 Test nozzle holder
 assembly : 1 688 901 019

 Opening
 pressure, bar : 207...210

 Orifice plate
 diameter mm : 0,8

 Test lines : 1 680 750 067

 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

 Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1180

 Rack travel in mm : 10.70...10.80

 Del. quantity cm³/ : 15.7...15.9

 100 s: (15.4...16.2)

 Spread cm³ : 0.5

 100 s: (0.9)

 2nd speed rpm : 750.0
 Rack travel in mm : 3.3...3.5
 Del. quantity cm³/ : 1.8...2.4
 100 s: (1.5...2.7)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1180
 Del. quantity : 157.0...159.0
 1000 : (154.0...162.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 56...64

Testing:

1st rack travel in: 9.70
Speed rpm : 1210...1220
2nd rack travel in: 4.00
Speed rpm : 1240...1260
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 32...40
Setting point w/out bumper spring
Speed rpm : 750
Rack travel in mm : 3.4
Speed rpm : 750
Rack travel in mm : 3.30...3.50
Rack travel in mm : 2.00
Speed rpm : 755...815

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1180
Rack travel in m: 10.70...10.80
2nd speed rpm : 950
Rack travel in m: 11.20...11.40
3rd speed rpm : 1075
Rack travel in m: 11.00...11.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 950
Del. quantity cm³/ : 165.0...172.0
1000 s: (165.0...175.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1210...1220

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

When adjusting and checking, adjust speed regulation to 1210...1220 l/min. Afterwards, readjust speed regulation to 1160...1170 l/min.

APPLICATION

Combine-harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 Q10
 Edition : 18.12.87
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 876 740C

Injection pump
 Pump designation : PE6P120A32OLS3815-10
 EP type number : 0 411 826 735
 Governor
 Governor design. : RSV750...1150P1A820-
 4

Governer no. : 0 421 833 179

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM421A

1st version kW : 184.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1180

 Rack travel in mm : 10.10...10.20

 Del. quantity cm³/ : 14.8...15.0

 100 s: (14.5...15.3)

 Spread cm³ : 0.5

 100 s: (0.9)

2nd speed rpm : 750.0
 Rack travel in mm : 3.3...3.5
 Del. quantity cm³/ : 1.8...2.4
 100 s: (1.5...2.7)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 7

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1180
 Del. quantity : 148.0...150.0
 1000 : (145.0...153.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 56...64

Testing:

1st rack travel in: 9.10
Speed rpm : 1210...1220
2nd rack travel in: 4.00
Speed rpm : 1240...1260
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 32...40
Setting point w/out bumper spring
Speed rpm : 750
Rack travel in mm : 3.4
Speed rpm : 750
Rack travel in mm : 3.30...3.50
Rack travel in mm : 2.00
Speed rpm : 755...815

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1180
Rack travel in m: 10.10...10.20
2nd speed rpm : 950
Rack travel in m: 10.50...10.70
3rd speed rpm : 1075
Rack travel in m: 10.30...10.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 950
Del. quantity cm³/ : 159.0...163.0
1000 s: (156.0...166.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.10
Speed rpm : 1210...1220

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks: :

When adjusting and checking, adjust
speed regulation to 1210...1220 l/min.
Afterwards, readjust speed regulation
to 1160...1170 l/min.

APPLICATION

Forage harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 Q 7
 Edition : 11.12.87
 Replaces : 9.10.87
 Test oil : ISO-4113

Combination no. : 0 401 876 753

Injection pump
 Pump designation : PE6P120A320LS3815-10
 EP type number : 0 411 826 735
 Governor
 Governor design. : RSV750...1150P1A820-6
 Governor no. : 0 421 833 227

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM421A

1st version kW : 184.0
 Rated speed : 2300
 2nd version kW : 184.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow quantity min. 1/h: 100...120

Test nozzle holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter x Wall thickness x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)

Rack travel in mm : 9.00...12.00

Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1180

Rack travel in mm : 10.70...10.80

Del. quantity cm³/ : 15.7...15.9
 100 s: (15.4...16.2)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 750.0

Rack travel in mm : 3.4...3.6

Del. quantity cm³/ : 1.8...2.4
 100 s: (1.5...2.7)

Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1180
 Del. quantity : 157.0...159.0
 1000 : (154.0...162.0)

Spread cm³ : 5.00
 1000 : (9.00)

2nd version

Speed rpm : 1180
Del.quantity cm3/ : 148.0...150.0
1000 s: (145.0...153.0)
Spread cm3 : 5.00
1000 s: (9.00)

RATED SPEED

1st version
Control lever
position degrees: 56...64

Testing:

1st rack travel in: 9.70
Speed rpm : 1210...1220
2nd rack travel in: 4.00
Speed rpm : 1240...1260
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 32...40
Setting point w/out bumper spring
Speed rpm : 750
Rack travel in mm : 3.4
Speed rpm : 750
Rack travel in mm : 3.30...3.50
Rack travel in mm : 2.00
Speed rpm : 755...815

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1180
Rack travel in m: 10.70...10.80
2nd speed rpm : 950
Rack travel in m: 11.20...11.40
3rd speed rpm : 1075
Rack travel in m: 11.00...11.20

START CUT-OUT

Speed 1/min : 5 (0)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 950
Del.quantity cm3/ : 168.0...172.0
1000 s: (165.0...175.0)
Spread cm3 : 8.00
1000 s: (12.0)

2nd version

Speed rpm : 975

Del.quantity cm3/ : 159.0...163.0
1000 s: (156.0...166.0)
Spread cm3 : 9.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1210...1220

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:

:

When adjusting and checking, adjust speed regulation to 1210...1220 l/min. Afterwards, readjust speed regulation to 1160...1170 l/min.

APPLICATION

Version 1 = Combine harvester
Version 2 = Forage harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 Q11
 Edition : 18.12.87
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 876 753A

Injection pump
 Pump designation : PE6P120A320LS3815-10
 EP type number : 0 411 826 735
 Governor
 Governor design. : RSV750...1150P1A820-
 6

Governer no. : 0 421 833 227

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM421A

1st version kW : 184.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1180

Rack travel in mm : 10.10...10.20

Del. quantity cm³/ : 14.8...15.0

100 s: (14.5...15.3)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 750.0

Rack travel in mm : 3.4...3.6

Del. quantity cm³/ : 1.8...2.4

100 s: (1.5...2.7)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1180

Del. quantity : 148.0...150.0

1000 : (145.0...153.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 56...64

Testing:

1st rack travel in: 9.10
Speed rpm : 1210...1220
2nd rack travel in: 4.00
Speed rpm : 1240...1260
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 32...40
Setting point w/out bumper spring
Speed rpm : 750
Rack travel in mm : 3.4
Speed rpm : 750
Rack travel in mm : 3.30...3.50
Rack travel in mm : 2.00
Speed rpm : 755...815

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1180
Rack travel in m: 10.10...10.20
2nd speed rpm : 950
Rack travel in m: 10.50...10.70
3rd speed rpm : 1075
Rack travel in m: 10.30...10.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 950
Del. quantity cm³/ : 159.0...163.0
1000 s: (156.0...166.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.10
Speed rpm : 1210...1220

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks: :

When adjusting and checking, adjust
speed regulation to 1210...1220 l/min.
Afterwards, readjust speed regulation
to 1160...1170 l/min.

APPLICATION
Forage harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 Q12
 Edition : 18.12.87
 Replaces : -
 Test oil : ISO-4113

 Combination no. : 0 401 876 753B

 Injection pump
 Pump designation : PE6P120A32OLS3815-10
 EP type number : 0 411 826 735
 Governor
 Governor design. : RSV750...1150P1A820-6
 Governor no. : 0 421 833 227

 Customer-spec. information
 Customer : DAIMLER-BENZ

 Engine : OM421A

 1st version kW : 184.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

 Overflow valve : 1 417 413 025

 Inlet press., bar : 1.50

 Overflow
 quantity min. 1/h: 100...120

 Test nozzle holder
 assembly : 1 688 901 019

 Opening
 pressure, bar : 207...210

 Orifice plate
 diameter mm : 0,8

 Test lines : 1 680 750 067

 Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

 Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

 Phasing : 0-45-120-165-240-285

 Tolerance + - ° : 0.50 (0.75)

 Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1180

 Rack travel in mm : 11.20...11.30

 Del. quantity cm³/ : 16.3...16.5

 100 s: (16.0...16.8)

 Spread cm³ : 0.5

 100 s: (0.9)

 2nd speed rpm : 750.0
 Rack travel in mm : 3.4...3.6
 Del. quantity cm³/ : 1.8...2.4
 100 s: (1.5...2.7)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SPRING POSITION

Control lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : A

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1180
 Del. quantity : 163.0...165.0
 1000 : (160.0...168.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 56...64

Testing:

1st rack travel in: 10.20
Speed rpm : 1210...1220
2nd rack travel in: 4.00
Speed rpm : 1235...1255
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 32...40
Setting point w/out bumper spring
Speed rpm : 750
Rack travel in mm : 3.4
Speed rpm : 750
Rack travel in mm : 3.30...3.50
Rack travel in mm : 2.00
Speed rpm : 755...815

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1180
Rack travel in m: 11.20...11.30
2nd speed rpm : 950
Rack travel in m: 11.70...11.80
3rd speed rpm : 1075
Rack travel in m: 11.40...11.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 950
Del. quantity cm³/ : 174.0...178.0
1000 s: (171.0...181.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 10.20
Speed rpm : 1210...1220

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:
:

When adjusting and checking, adjust
speed regulation to 1210...1220 l/min.
Afterwards, readjust speed regulation
to 1160...1170 l/min.

APPLICATION

Combine-harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 Q13
 Edition : 18.12.87
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 876 753C

Injection pump
 Pump designation : PE6P120A32QLS3815-10
 EP type number : 0 411 826 735
 Governor
 Governor design. : RSV750...1150P1A820-6
 Governor no. : 0 421 833 227

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM421A

1st version kW : 184.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6,00x1,50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1180

Rack travel in mm : 10.40...10.50

Del. quantity cm³/ : 15.3...15.5

100 s: (15.0...15.8)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 750.0

Rack travel in mm : 3.4...3.6

Del. quantity cm³/ : 1.8...2.4

100 s: (1.5...2.7)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1180

Del. quantity : 153.0...155.0

1000 : (150.0...158.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 56...64

Testing:

1st rack travel in: 9.40
Speed rpm : 1210...1220
2nd rack travel in: 4.00
Speed rpm : 1240...1260
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 32...40
Setting point w/out bumper spring
Speed rpm : 750
Rack travel in mm : 3.4
Speed rpm : 750
Rack travel in mm : 3.30...3.50
Rack travel in mm : 2.00
Speed rpm : 755...815

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1180
Rack travel in m: 10.40...10.50
2nd speed rpm : 950
Rack travel in m: 11.00...11.20
3rd speed rpm : 1075
Rack travel in m: 10.60...10.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 950
Del. quantity cm³/ : 164.0...168.0
1000 s: (161.0...171.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1210...1220

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:
:

When adjusting and checking, adjust
speed regulation to 1210...1220 l/min.
Afterwards, readjust speed regulation
to 1160...1170 l/min.

APPLICATION

Forage harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PEN 10,0 K
 Edition : 07.01.88
 Replaces : 7.11.86
 Test oil : ISO-4113

Combination no. : 0 401 876 754

Injection pump
 Pump designation : PE6P110A32ORS3152
 EP type number : 0 411 816 746
 Governor
 Governor design. : RSV200...1100P4A515-1
 Governor no. : 0 421 833 247

Customer-spec. information
 Customer : VOLVO-PENTA

Engine : TD100G

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.60...12.70

Del. quantity cm³/ : 17.2...17.4
 100 s: (16.9...17.7)

Spread cm³ : 0.4
 100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 4.1...4.3

Del. quantity cm³/ : 1.9...2.3
 100 s: (1.6...2.5)

Spread cm³ : 0.4
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 6.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1000

Del. quantity : 172.0...174.0
 1000 : (169.0...177.0)

Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
 Control lever
 position degrees: 71...79

Testing:

1st rack travel in: 11.60
 Speed rpm : 1120...1130

2nd rack travel in: 4.00
 Speed rpm : 1165...1195

4th rack travel in: 1300

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 25...33

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 3.7

Testing:

Speed rpm : 100

Speed rpm : 250

Rack travel in mm : 4.10...4.30

Rack travel in mm : 2.00

Speed rpm : 290...350

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Rack travel in mm : 1000

Contr.-rod trav.mm: 12.60...12.70

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 10.10...10.20

2nd pressure hPa : 580

Rack travel in m: 12.40...12.50

3rd pressure hPa : 270

Rack travel in m: 10.30...10.50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 700

Del.quantity cm³/ : 124.5...127.5

1000 s: (122.0...130.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.60

Speed rpm : 1120...1130

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

N12

Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250

Rack travel in mm : 4.10...4.30

Del.quantity cm³/ : 19.0...23.0

1000 s: (16.5...25.5)

Spread cm³ : 4.50

1000 s: (7.50)

Remarks:

:

Delivery-valve spring pre-tension =

2.40...2.60 mm.

Permissible alteration from 2.20...2.90

mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 D 6
Edition : 15.01.88
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 876 764
Injection pump
Pump designation : PE6P110A32OLS3805-10
EP type number : 0 411 816 740
Governor
Governor design. : RSV650...1200POA820-9
Governor no. : 0 421 833 294
Customer-spec. information
Customer : DAIMLER-BENZ
Engine : OM421
1st version kW : 159.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Overflow
quantity min. 1/h: 100...120
Test nozzle holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
Test lines : 1 680 750 015
Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1230

Rack travel in mm : 12.10...12.20

Del. quantity cm³/ : 13.4...13.6

100 s: (13.1...13.8)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 650.0
Rack travel in mm : 6.0...6.2
Del. quantity cm³/ : 1.6...2.2
100 s: (1.3...2.4)
Spread cm³ : 0.4
100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1230
Del. quantity : 134.0...136.0
1000 : (131.5...138.5)
Spread cm³ : 4.00
1000 : (8.00)

RATED SPEED

1st version
Control lever
position degrees: 45...53

Testing:

1st rack travel in: 11.20
Speed rpm : 1260...1270
2nd rack travel in: 4.00
Speed rpm : 1290...1320
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 23...31
Setting point w/out bumper spring
Speed rpm : 650
Rack travel in mm : 6.1

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 650
Rack travel in mm : 6.00...6.20
Rack travel in mm : 2.00
Speed rpm : 650...715

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1230
Rack travel in m: 12.10...12.30
2nd speed rpm : 950
Rack travel in m: 12.80...12.90
3rd speed rpm : 1100
Rack travel in m: 12.50...12.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 950
Del. quantity cm³/ : 136.0...140.0
1000 s: (133.0...143.0)
Spread cm³ : 6.00
1000 s: (9.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 11.20
Speed rpm : 1260...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

When adjusting and checking, adjust
speed regulation to 1210...1220 l/min.
Afterwards, readjust speed regulation
to 1160...1170 l/min.

APPLICATION

Combine-harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 10,0 A
 Edition : 07.01.88
 Replaces : 18.9.87
 Test oil : ISO-4113

Combination no. : 0 402 035 020

Injection pump
 Pump designation : PESSP120A720/3LS512
 EP type number : 0 412 025 021
 Governor
 Governor design. : RQ300/1100PAB13-1
 Governor no. : 0 421 801 405

Customer-spec. information

Customer : MAN

Engine : D2865LF/260

1st version kW : 191,0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1,50

Test nozzle holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter x Wall thickness x Length mm : 6,00x1,50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 5

BASIC SETTING

1st speed rpm : 750

 Rack travel in mm : 10.70...10.80

 Del. quantity cm³/ : 20.9...21.1

 100 s: (20.6...21.4)

 Spread cm³ : 0.5

 100 s: (0.9)

 2nd speed rpm : 300.0
 Rack travel in mm : 3.9...4.1
 Del. quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.1)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 600
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Aneroid pressure h: 1000
 Del. quantity : 209.0...211.0
 1000 : (206.0...214.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:
 1st rack travel in: 9.00

Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.0

Testing:

Speed rpm : 100
Minimum rack trave: 5.50
Speed rpm : 300
Rack travel in mm : 3.90...4.10
Rack travel in mm : 2.00
Speed rpm : 320...380

TORQUE CONTROL

Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.00...10.10
2nd speed rpm : 750
Rack travel in m: 10.80...11.00
3rd speed rpm : 920
Rack travel in m: 10.40...10.60

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 10.70...10.80

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.20...8.40
2nd pressure hPa : 460
Rack travel in m: 10.00...10.10
3rd pressure hPa : 280
Rack travel in m: 8.60...8.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1100

Del.quantity cm³/ : 193.0...197.0
1000 s: (190.0...200.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm³/ : 200.0...206.0
1000 s: (197.0...209.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 135.0...137.0
1000 s: (132.0...140.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 3.90...4.10
Del.quantity cm³/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 10,0 B
 Edition : 07.01.88
 Replaces : 18.9.87
 Test oil : ISO-4113
 Combination no. : 0 402 035 021
 Injection pump
 Pump designation : PESSP120A720/3LS512
 EP type number : 0 412 025 021
 Governor
 Governor design. : RQV300...1100PA876
 Governor no. : 0 421 813 661

Customer-spec. information

Customer : MAN
 Engine : D2865LF/260
 1st version kW : 191.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 1 688 901 019
 Opening pressure, bar : 207...210
 Orifice plate diameter mm : 0,8
 Test lines : 1 680 750 067
 Outside diameter x Wall thickness x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 5

BASIC SETTING

1st speed rpm : 750

 Rack travel in mm : 10.70...10.80

 Del. quantity cm³/ : 20.9...21.1

 100 s: (20.6...21.4)

 Spread cm³ : 0.5

 100 s: (0.9)

 2nd speed rpm : 300.0
 Rack travel in mm : 3.9...4.1
 Del. quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.1)
 Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL
 1st speed rpm : 300
 travel mm : 1.70...2.00
 2nd speed rpm : 850
 travel mm : 6.00...6.20
 3rd speed rpm : 1100
 travel mm : 8.10...8.30

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -1
 Speed rpm : 1130
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Aneroid pressure h: 1000
 Del. quantity : 209.0...211.0
 1000 : (206.0...214.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 49...57

Testing:

1st rack travel in: 9.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1215...1245
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 14...22

Testing:

Speed rpm : 100
Minimum rack travel: 5.50
Speed rpm : 300
Rack travel in mm : 3.90...4.10

CONSTANT REGULATION

Speed rpm : 310...410

TORQUE CONTROL

Dimension a mm : 0.70
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 10.70...10.80
2nd speed rpm : 1100
Rack travel in m: 10.00...10.10
3rd speed rpm : 900
Rack travel in m: 10.40...10.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 10.70...10.80

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.20...8.40
2nd pressure hPa : 460
Rack travel in m: 10.00...10.10
3rd pressure hPa : 280
Rack travel in m: 8.60...8.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1100
Del.quantity cm3/ : 193.0...197.0
1000 s: (190.0...200.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm3/ : 200.0...206.0
1000 s: (197.0...209.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 135.0...137.0
1000 s: (132.0...140.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 3.90...4.10
Del.quantity cm3/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9A26
Edition : 11.12.87
Replaces : 31.7.87
Test oil : ISO-4113
Combination no. : 0 402 036 049
Injection pump
Pump designation : PES6P120A720/3LS470-
2
EP type number : 0 412 026 050
Governor
Governor design. : RQ300/1100PA658-23
Governor no. : 0 421 801 391

Customer-spec. information

Customer : MAN
Engine : D2866KUH

1st version kW : 265.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Test nozzle holder
assembly : 1 688 901 019
Opening
pressure, bar : 207...210
Orifice plate
diameter mm : 0,8
Test lines : 1 680 750 067
Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750
Rack travel in mm : 12.50...12.60
Del. quantity cm³/ : 23.8...24.0
100 s: (23.5...24.3)
Spread cm³ : 0.5
100 s: (0.9)
2nd speed rpm : 300.0
Rack travel in mm : 4.8...5.0
Del. quantity cm³/ : 1.2...1.8
100 s: (0.9...2.1)
Spread cm³ : 0.8
100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -2
Speed rpm : 600
Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 750
Aneroid pressure h: 1000
Del. quantity : 238.0...240.0
1000 : (235.0...243.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Setting point:
Speed rpm : 600
Rack travel in mm : 20.0

Testing:

1st rack travel in: 10.30
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.9

Testing:

Speed rpm : 100
Minimum rack travel: 6.40
Speed rpm : 300
Rack travel in mm : 4.80...5.00
Rack travel in mm : 2.00
Speed rpm : 345...385

TORQUE CONTROL

Dimension a mm : 0.55
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 12.60...12.90
2nd speed rpm : 1100
Rack travel in m: 11.30...11.40
3rd speed rpm : 935
Rack travel in m: 12.10...12.50
4th speed rpm : 990
Rack travel in m: 11.80...12.10

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 12.50...12.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.60...8.70
2nd pressure hPa : 190
Rack travel in m: 8.90...9.00
3rd pressure hPa : 520
Rack travel in m: 11.10...11.40

START CUT-OUT

Speed 1/min : 190 (210)

FUEL DELIVERY CHARACTERISTICS

1st version

N20

Aneroid pressure h: 1000
Speed rpm : 1100
Del.quantity cm3/ : 213.0...219.0
1000 s: (210.0...222.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm3/ : 239.0...245.0
1000 s: (236.0...248.0)
Aneroid pressure h: 520
Speed rpm : 500
Del.quantity cm3/ : 188.0...200.0
1000 s: (185.0...203.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 115.0...117.0
1000 s: (112.0...120.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.30
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.80...5.00
Del.quantity cm3/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7719

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9A21
Edition : 29.01.88
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 402 036 057

Injection pump
Pump designation : PES6P120A720/3LS470-
2
EP type number : 0 412 026 050
Governor
Governor design. : RQV300...1100PA700-1
Governor no. : 0 421 813 528

Customer-spec. information
Customer : MAN

Engine : D2866LF

1st version kW : 243.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY
Test pressure, bar: 30...32

N21

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 11.30...11.40

Del. quantity cm³/ : 20.2...20.4

100 s: (19.9...20.7)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.7...4.9

Del. quantity cm³/ : 1.2...1.8

100 s: (0.9...2.1)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.40...1.60

2nd speed rpm : 850
travel mm : 5.60...5.90

3rd speed rpm : 1100
travel mm : 7.70...7.90

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1130

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Aneroid pressure h: 1000

Del. quantity : 202.0...204.0

1000 : (199.0...207.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 48...56

Testing:

1st rack travel in: 9.50
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1215...1245
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 14...22

Testing:

Speed rpm : 100
Minimum rack travel: 6.30
Speed rpm : 300
Rack travel in mm : 4.70...4.90

CONSTANT REGULATION

Speed rpm : 310...410

TORQUE CONTROL

Dimension a mm : 0.80
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 11.30...11.40
2nd speed rpm : 1100
Rack travel in m: 10.50...10.60
3rd speed rpm : 850
Rack travel in m: 11.00...11.20
4th speed rpm : 975
Rack travel in m: 10.70...11.00

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 11.30...11.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.90...9.10
2nd pressure hPa : 85
Rack travel in m: 9.30...9.40
3rd pressure hPa : 280

Rack travel in m: 10.50...10.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1100
Del.quantity cm³/ : 204.0...206.0
1000 s: (201.0...209.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm³/ : 208.0...214.0
1000 s: (205.0...217.0)
Aneroid pressure h: 280
Speed rpm : 500
Del.quantity cm³/ : 184.0...196.0
1000 s: (181.0...199.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 132.0...134.0
1000 s: (129.0...137.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.50
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.70...4.90
Del.quantity cm³/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7757

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9A16
Edition : 11.12.87
Replaces : 18.8.87
Test oil : ISO-4113
Combination no. : 0 402 036 059
Injection pump
Pump designation : PES6P120A723/3LS470-
2
EP type number : 0 412 026 050
Governor
Governor design. : RQV300...1100PA669-1
Governor no. : 0 421 813 534

Customer-spec. information
Customer : MAN

Engine : D2866KUH

1st version kW : 265.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 12.50...12.60

Del. quantity cm³/ : 23.8...24.0

100 s: (23.5...24.3)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.8...5.0

Del. quantity cm³/ : 1.2...1.8

100 s: (0.9...2.1)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.70...2.00

2nd speed rpm : 850

travel mm : 6.00...6.20

3rd speed rpm : 1100

travel mm : 8.10...8.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1130

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Aneroid pressure h: 1000

Del. quantity : 238.0...240.0

1000 : (235.0...243.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 60...68

Testing:
1st rack travel in: 10.30
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1225...1255
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 6...14

Testing:
Speed rpm : 100
Minimum rack travel: 6.40
Speed rpm : 300
Rack travel in mm : 4.80...5.00
Rack travel in mm : 2.00
Speed rpm : 360...420

TORQUE CONTROL

Dimension a mm : 1.15
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 12.50...12.60
2nd speed rpm : 1100
Rack travel in m: 11.30...11.40
3rd speed rpm : 900
Rack travel in m: 12.10...12.30
4th speed rpm : 1000
Rack travel in m: 11.50...11.80

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav. mm: 12.50...12.60

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.60...8.70
2nd pressure hPa : 190
Rack travel in m: 8.90...9.00
3rd pressure hPa : 520
Rack travel in m: 11.10...11.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 1100
Del. quantity cm³/ : 213.0...219.0
1000 s: (210.0...222.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del. quantity cm³/ : 239.0...245.0
1000 s: (236.0...248.0)
Aneroid pressure h: 520
Speed rpm : 500
Del. quantity cm³/ : 188.0...200.0
1000 s: (188.0...200.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 115.0...117.0
1000 s: (112.0...120.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.30
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.80...5.00
Del. quantity cm³/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks: : MAN-NR. 2-7650

APPLICATION
Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9a24
 Edition : 11.03.88
 Replaces : 18.9.87
 Test oil : ISO-4113

Combination no. : 0 402 036 062

Injection pump
 Pump designation : PES6P120A720/3LS470-
 2
 EP type number : 0 412 026 050
 Governor
 Governor design. : RQ300/1100PA813
 Governor no. : 0 421 801 358

Customer-spec. information
 Customer : MAN

Engine : D2866LF/330

1st version kW : 243.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

N25

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 11.10...11.20

Del. quantity cm³/ : 20.2...20.4

100 s: (19.9...20.7)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.7...4.9

Del. quantity cm³/ : 1.2...1.8

100 s: (0.9...2.1)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Aneroid pressure h: 1000

Del. quantity : 202.0...204.0

1000 : (199.0...207.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 9.50
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.8

Testing:

Speed rpm : 100
Minimum rack trave: 6.30
Speed rpm : 300
Rack travel in mm : 4.70...4.90
Rack travel in mm : 2.00
Speed rpm : 340...380

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.70...10.80
2nd speed rpm : 750
Rack travel in m: 11.90...12.20
3rd speed rpm : 900
Rack travel in m: 11.70...11.90
4th speed rpm : 975
Rack travel in m: 11.00...11.30

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Rack travel in mm : 1000
Contr.-rod trav.mm: 11.10...11.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.90...9.10
2nd pressure hPa : 85
Rack travel in m: 9.30...9.40
3rd pressure hPa : 280
Rack travel in m: 10.50...10.80

START CUT-OUT

Speed 1/min : 190 (210)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1100
Del.quantity cm3/ : 204.0...208.0
1000 s: (201.0...211.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm3/ : 203.0...209.0
1000 s: (200.0...212.0)
Aneroid pressure h: 280
Speed rpm : 500
Del.quantity cm3/ : 184.0...196.0
1000 s: (181.0...199.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 132.0...134.0
1000 s: (129.0...137.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.50
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.70...4.90
Del.quantity cm3/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7823

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 B1
 Edition : 11.12.87
 Replaces : 18.8.87
 Test oil : ISO-4113

Combination no. : 0 402 036 065

Injection pump
 Pump designation : PES6P110A720/3LS477-
 2
 EP type number : 0 412 016 071
 Governor
 Governor design. : RQV300...1100PA831
 Governor no. : 0 421 813 574

Customer-spec. information
 Customer : MAN

Engine : D2866 F

1st version kW : 177.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x ball thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values -----

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 11.70...11.80

Del. quantity cm³/ : 12.3...12.6

 100 s: (12.0...12.8)

Spread cm³ : 0.4

 100 s: (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del. quantity cm³/ : 1.5...2.0
 100 s: (1.2...2.2)
 Spread cm³ : 0.4
 100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.10...1.30
 2nd speed rpm : 450
 travel mm : 3.00...3.40
 3rd speed rpm : 900
 travel mm : 6.00...6.30
 4th speed rpm : 1100
 travel mm : 7.70...7.90

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1170
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 800
 Del. quantity : 123.0...126.0
 1000 : (120.5...128.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 49...57

Testing:

1st rack travel in: 10.70

Speed rpm : 1140...1150

2nd rack travel in: 4.00

Speed rpm : 1230...1260

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 16...24

Testing:

Speed rpm : 100

Minimum rack travel: 7.50

Speed rpm : 300

Rack travel in mm : 5.90...6.10

CONSTANT REGULATION

Speed rpm : 300...395

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100

Del. quantity cm3/ : 132.0...138.0

1000 s: (129.0...141.0)

Speed rpm : 500

Del. quantity cm3/ : 117.0...123.0

1000 s: (114.0...126.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70

Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm3/ : 110.0...130.0

1000 s: (106.0...134.0)

LOW IDLE

N28

Speed rpm : 300

Rack travel in mm : 5.90...6.10

Del. quantity cm3/ : 15.0...20.0

1000 s: (12.5...22.5)

Spread cm3 : 4.50

1000 s: (7.50)

Remarks:

: MAN-NR. 2-7723